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Address of President

A Consideration of Full Time and Part Time Faculty Services in the Medical Schools of North America in Relation to Medical Education and the Care of the Sick*

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There is nothing new about the issue I shall bring to your attention at this 56th meeting of the Association of American Medical Colleges. It is a time-worn controversial subject that has been in evidence for more than fifty years, has never been silent and is giving rise to renewed agitation in many of our medical schools today. I refer to academic tenure in medical education.

Since the turn of the century, reforms in medical teaching designed to promote and institute full time or some modification of it in medical education have been proposed from time to time in nearly all medical schools of this country. Today, rather pervasive discussions of this problem are in progress, often giving rise to acrimonious disputes and internal dissension, but frequently concealed by those who are engaged in them. It seems a propitious time, therefore, to reflect upon the conflicts of the past and to point out the present unsettled status of the thing we call "rights of academic tenure." Improved economic conditions, which are throwing a large patient load upon men in the clinical departments, reduced staffs resulting from the movement of faculty members into the Armed Services and Civic Agencies, and general dissatisfaction concerning salaries, which are alleged not to have kept pace with the rising cost of living, are perhaps some of the reasons for renewed agitation in tenurial policies. It is also conceivable that reconversion, which has suddenly been thrust upon our medical schools, is in a measure responsible for the concept that the optimum time has been reached for long needed reforms in academic tenure.

In the early years of American medical education, the teachers of the basic sciences were recruited from the leading practitioners of the community. Local doctors taught the fundamental sciences and because their stipends were small (this was particularly true in the clinical departments) they had to support themselves by devoting most of their time to the care of their private patients.

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The evolution of medicine, with its rapid discoveries in the basic sciences soon overwhelmed the practicing physician and left him submerged in a deluge of literature in scientific research which he had neither the time nor the ability to comprehend. The fundamental sciences such as pathology, physiology, biological chemistry and pharmacology were growing by leaps and bounds, while the teachers of these subjects were suffering the ills of decadence from which recovery was obviously impossible. It thus became evident that it was not feasible nor practicable to entrust the teaching of the basic sciences to local practitioners of medicine; that the laboratories of these sciences must be reorganized and staffed with young men of inalienable scientific rectitude and that skill and competence in teaching and research should be the important criteria for their incumbency. When this was accomplished, the newly appointed members of the preclinical faculties grew scientifically, promulgated new concepts of medical education and finally laid the foundation for our present curriculum. Furthermore, their activities led to the organization of various units and subdivisions, and ultimately to departmentalization as we find it today in the fields of the basic sciences.

When the teaching of the fundamental sciences had been taken away from the practitioners of medicine and given to scientifically trained men not engaged in the oppressive responsibilities of private practice, there came a cry for reform in the clinical departments of medicine. It was said that these services should be staffed by men possessed of talents and objectives similar to those of the professors in the fundamental sciences and that they should carry on research in the wards and laboratories which would lead to important contributions to medical knowledge. Like the basic science teachers, they should give all their time and effort to hospital work, teaching and clinical research. "They should be well paid by the University," "they should not engage in private practice." Consultations should be permitted in exceptional instances, but the fees received from them "should be contributed to the budgets of the hospitals themselves."

As the controversy raged, leaders in organized medicine and medical educators criticized the plan as impracticable. It was emphasized that "it would be prohibitively expensive," "that professors need the experience gained from daily practice and that those engaged in private practice impart to the students a better idea of medicine as a whole and coordinate and arrange the isolated facts of clinical and laboratory investigation." It was pointed out further that on the basis of full time, it would be impossible to secure and hold the best men on the salaries offered by most medical schools. It would be necessary to employ young men in the clinical chairs with little experience and without established reputation and these, obviously, would not strengthen nor enhance the reputation of the institutions of higher learning. Attention was also called to the fact that it would be impossible to keep the public and the profession away from reputable men in the clinical fields; that it would be a great loss to the community to withdraw them from outside practice by limiting their activities to teaching and research. It was further contended that "the limitation of practice in the hospitals would deprive the teachers of opportunities and experi-

ences valuable to them in their own development and in their training of students to become practitioners."

Thus, since 1892 a comparison of the advantages and disadvantages of full time and part time has been the subject of controversial discussion in most of the medical schools of this country. Academic ideals have been emphasized by the proponents of full time. Single minded devotion to the University, they say, can be expected only from those clinical teachers who are devoid of an absorbing outside practice. In contrast, the advocates of part time lean heavily upon the contention that full time limits the opportunities for mental growth, restricts clinical interest, and stifles ambition. The same arguments that were posed fifty years ago are always in evidence today when this dispute arises and the same conclusion is usually reached; namely, a compromise which includes both full time and part time programs in the Medical School which unhappily becomes the victim of this controversy.

I say "unhappily becomes the victim of this controversy" because the schools that have battled this issue have suffered some painful injuries and casualties which time alone has rehabilitated. For a decade we licked the wounds inflicted at Michigan by a futile attempt in 1920 to institute a "pork-barrel" plan of full time, and the historical files of other medical schools in this country indicate that they have suffered similar experiences. There came a rift among our clinical faculty at Michigan in 1920; the friendly cooperative feeling which had existed during the previous ten years was no longer in evidence and a divided faculty engaged in a pitched battle which was marked by incriminations and imputations too personal to offer in this discussion. The debauch at Michigan lasted for approximately a decade, gave rise to nothing of a constructive nature in medical education and was tempered and finally silenced only by the resignation, retirement or death of those who had participated in it. The end result of this unnecessary intrigue and controversy was precisely that which has been experienced the country over, namely, an ultimate admixture of part time and full time attempting to meet the needs of medical education and research in a medical school conscious of its responsibilities to maintain high academic standards.

DEFINITION

It would seem desirable as a preliminary to a further discussion of this problem, to define the terms full time and part time faculty services. Considerable misunderstanding and confusion still exist in regard to the meaning of these designations because they have been given different values and interpretations in various parts of the country.

For example, full time in some medical schools, often called geographical full time, indicates that the faculty member maintains his office in an affiliated hospital and is permitted to conduct a consultation practice for which he is directly compensated by his patients. His practice is derived for the most part from patients referred to him by physicians, although it is seldom possible to enforce limitations or restrictions of this character upon the professional man who must care for the sick. His advice and services are frequently requested

by friends, acquaintances and influential persons who come to him directly, without reference from another doctor because of his reputable position in the profession and special skills in some field of medicine.

Traditionally, full time in the Medical School of the University of Michigan and in many other institutions is defined as that type of service in which the basic tenet is that professors in the clinical departments shall devote their time to teaching, research and the care of the sick and be remunerated in full by salaries paid from the general funds of the university.

In contrast, part time is defined as that type of service in which the professors in the clinical departments devote their major interest and effort to their departments, but are permitted to utilize a portion of their time for the practice of medicine and to collect and hold fees derived from private patients.

Full time as above defined and practiced in a few institutions in this country remains a somewhat confused and abstruse designation. In substance, it means that the faculty member of the clinical department so classified should devote his energies and time to teaching, research and hospital work without seeking a livelihood from the practice of medicine. The term, perhaps, is in many instances a misnomer. Many of the clinical professors in this country who are listed as full time men augment their incomes from sources outside their regular university salaries. Royalties from books, fees for lectures, compensation for industrial counsel, services to insurance companies, medical legal expert testimony, etc., frequently constitute the various means of increase in university salaries to full time men.

PART TIME AND FULL TIME TENURE AS THEY APPEAR IN THE VARIOUS MEDICAL SCHOOLS OF THIS COUNTRY

From a perusal of the bylaws of various medical schools, a study of their histories, and discussions with their Deans, I gather that there are four plans of academic tenure in existence today. Each may vary somewhat in its philosophies and administrative details but in general, they fall into four main categories.

The first plan, which might be considered the purest form of full time is that in which the members of the faculty without exception, receive fixed salaries and are prohibited from accepting remuneration for any kind of service, professional or otherwise. The constitution or bylaws of the institutions operating under this system prohibit the acceptance of compensation for any services rendered in line of duty. All pecuniary benefits derived from services which might be interpreted to be the responsibilities and obligations of the institutions are credited to the treasury of the school.

I need not take your time to reiterate the claims of the proponents of this plan. There is the same resort to statements of praise that were heard fifty years ago. The same assertions of its idealistic influences and practical values are being made now that were loudly acclaimed in 1910—undivided attention to academic ideals, uninterrupted research programs, single minded devotion to the classroom,—and so on into righteous claims of an utopia in medical education.

Naturally, the question promptly comes to mind, "why has not this plan been universally adopted if it is one which is ideal and practicable?" If it is possible to maintain a medical school on this basis; an institution dedicated to a high standard of medical care, adequate training of medical students and the advancement of medical knowledge, why have so few schools adopted this system? Obviously, it does not enjoy great popularity or its use would be more widespread. Although advocated as early as 1910 by men who have made epochal contributions to the progress of medicine, this plan in its purest form is found in only a few institutions in this country and in these it is a recent experiment which has not yet stood the test of time. Are the expressions of skeptics true, that only two types of faculty members will remain in the clinical departments of a medical school operated under this system, the young man who is earning his spurs and the elderly clinician who is looking for a position in which to retire? Is it not true that when young men of professional talents and high academic attainments reach a certain level of training, their value in the open market gives rise to bids from other schools capable of offering rich inducements and that in the last analysis the candidate often goes to the highest bidder? Singular devotion to an institution is admirable but can it be relied upon for the maintenance of a progressive and dynamic faculty of young professional men? Any attempt to answer these questions will undoubtedly give rise to ethical differences of opinion. Among the elders of academic tenure, however, I can attest to one fact, namely, that when a faculty member reaches the later decades of life, he frequently expresses a willingness to accept a full time academic appointment where he may unobtrusively retire in a tranquil atmosphere free from competition, to devote his time to study, writing and research. It is not to be inferred that men approaching the retirement age are incapable of conducting their departments in a creditable manner. On the contrary, many of them continue to display a high degree of administrative competence, diagnostic acumen, and even surgical skill. But the point I wish to emphasize is that the institution is in little danger of losing the men, in their advanced years, aged 60 or over, because professorial appointments are seldom offered to persons in the later decades of life. If, by chance, an invitation should be tendered him, there is little likelihood of his acceptance at an age when transplantation to a new environment is difficult and impracticable.

The second plan of full time is frequently termed "geographic full time." This arrangement permits the faculty member to maintain an office within the affiliated teaching hospital to which he is devoting his major interest and to engage in private practice for fees paid him by his patients. While it is frequently indicated in resolutions or bylaws governing the activities of such faculty members that they must restrict their private practice to patients referred by physicians, it is seldom possible to limit their efforts to this group. Influential citizens and friends of the university request their services, and humanitarian considerations as well as the promotion of public relations, demand that the doctor care for persons who are sick, no matter what the auspices under which they may come for advice. No restrictions are placed upon the extent of his

private practice, except that it shall not be allowed to reach proportions that interfere with the application of his major interest to his department. Here, as in all walks of life, the institution must depend upon the loyalty, honesty and integrity of the man and his devotion to duty.

This plan seems to have enjoyed considerable popularity over the years, because we find it operating in many of our leading medical schools today. Affiliated teaching hospitals with modern outpatient departments seem to have instituted this system advantageously in their part time clinical departments. Institutions which are not equipped with private offices, examining rooms and other adequate facilities have never embraced geographic full time because their administrative officers have contended that it is not practicable or for the best interest of the hospital to employ the same waiting rooms and examining cubicles for patients who are public charges and those who are seeking private consultations.

Wherever facilities have been provided within an outpatient building such as those so efficiently utilized today by some of our large private clinics, geographic full time appears to be operating with satisfaction to the members of the faculty and administrative officers as well as with credit to the school.

The third plan calls for a salary budget for each department in the medical school sufficient to provide liberal salaries for the professors in the clinical services, ranging in some schools from $10,000 to $30,000 annually. No direct pecuniary benefits for medical or surgical care are received from the patient by the doctor. Fees derived from patients go to the general fund of the hospital and are utilized principally to pay adequate salaries to men who hold important clinical posts. In some institutions, income derived from private patients goes to the development of the department in which the patient is registered. In hospitals where this plan is utilized, the chairmen of departments and their staffs are on a full time basis, while other important members of the faculty in the dispensaries, in clinical teaching and in the instruction of special subjects, engage partly in the private practice of medicine. It is generally conceded by the administrative officers of these schools that part time men are advantageously used in their outpatient departments and in teaching schedules.

This program is obviously feasible and practicable for some of the endowed schools, but difficult of application in state supported institutions. At the University of Michigan this scheme, termed the "pork barrel" plan was tried in 1920. It was unremittingly disapproved by the Board of Regents and administrative officers who had long held the conviction that income derived from private patients should go to the general fund of the university and not to the development of the department in which the individual is rendered service. In closely knit medical schools where the clinical faculty is one large family, functioning as a team in mutual interest, this plan has never met with favor. Certain departments whose services are not in great demand may be obliged to subsist on meager incomes, while others not necessarily making equal contributions to medical education and research may enjoy the luxuries of prosperity derived from a peculiar service they are qualified to render.

This plan was attempted in the Medical School of the University of Michigan in the early twenties and was vehemently opposed by the medical profession of the state. The chief objection was the direct payment of fees derived from patients to the general fund of the University Hospital. Our alumni bitterly attacked the plan on the basis that they were unalterably opposed to a system that forced them to compete with a state institution which they, as residents of Michigan, were supporting by payment of taxes. The Medical School was exposed to the most bitter controversy of its career. The profession in Michigan strongly objected to the establishment of a private clinic in Ann Arbor, but steadfastly professed its willingness at any time to compete in private practice with individual physicians in the clinical departments of the Medical School.

This scheme at Michigan was abandoned more rapidly than it was conceived. It did not endure long enough to observe the reaction of members of the legislature, other state agencies and faculty members of other schools and colleges on the campus when first payment of a $25,000 salary was made to a member of the medical faculty. Administrative officers of the medical school saw the handwriting on the wall without the necessity of bringing the experiment to its logical conclusion.

In some of the endowed schools where this plan appears to operate successfully, it is to be observed that many of their faculty members who hold important posts are on a part time basis. As in most medical schools a mixture of the two plans is considered the best means of operating the clinical departments. The doctors who are on part time conduct their private practice in down town offices, but receive no compensation from ward and clinic patients and most of them receive nothing for their teaching services in the medical school.

The Deans of medical schools in which part time teachers receive no salary often express dissatisfaction with this policy. Failure of such members of the faculty to meet their classes or to discharge other duties of their office is often attributed to the lack of a feeling of obligation to an institution that does not compensate them for service. Their deeper interest is in their private offices. Wherever this plan has been adopted and it is widespread in many of the medical schools of this country, the deans look wistfully toward the time when their budgets will be augmented sufficiently to pay a salary to every faculty member who serves the clinical departments in any capacity.

The fourth plan is an arrangement whereby the members of the clinical staff collect and hold a stipulated sum of money from private patients examined and treated within their department. An income ceiling is usually established, although in some instances the faculty member may share with the medical school on a percentage basis, any fees earned above a designated amount. For example, the individual may be permitted to hold the first $10,000 collected as fees, but required to divide the next $5,000 equally between the institution and himself. In most instances, the medical school's share goes directly to the support of the staff member's department rather than to the general budget. My brief investigation of this plan seems to indicate that it has never been

popular, either with the administrative officers of the medical schools of this country, or with the clinical teachers. One Dean states that it is not satisfactory because of the lack of uniformity of remuneration among the professors of his school and the futility of attempting to keep salaries on some kind of a standard basis for the different academic ranks. For this reason, he writes, "it gives me many headaches" and states further that he has "been striving for a number of changes in this program for the past five years." Other criticisms have been expressed as follows:

1. It has been said that clinicians who have operated under this plan devoted so much time to the practice of medicine in an effort to compensate for the share of income allotted to the institution that they neglected their teaching duties and research programs. Their all-consuming interest was in the practice of medicine and the consequent enhancement of their incomes. What the medical school gained in money, it lost in teaching and research.

2. The retention of the institution's share of income for the staff member's own department led to the criticism currently expressed in regard to the pork barrel system of full time. Here the department better able to sell its wares profited to an envious extreme, while other less fortunate units equally or perhaps more important to the academic program of the medical school, were obliged to eke out an existence from the annual departmental appropriations and unpredictable private proffers.

3. This plan was applicable only to the chairman of the department, or perhaps to one or two of his immediate subordinates. Any attempt to give it general application led to internal competitive practices of unwholesome character and consequent impaired morale and disharmony among the members of the staff. Moreover, whenever a departmental pool was created in which all members of the staff contributed, the question of how much any one individual would withdraw became an important matter and one which led to bitter discussion. The administrator, charged with the duty of determining what percentage of the staff member's income should be returned to him, found himself confronted with a problem not easy to solve in an academic institution with high ideals of democracy.

4. On this plan the university must approve and report in its budget a large annual salary for outstanding teachers in the clinical departments. Here again, in a state supported institution the question is raised, what would be the reaction of the faculty in the other schools and colleges on the campus, members of the legislature and employees in other state agencies, to these high salaries. I suspect it would be one of avowed disapproval.

When our doubtful experiment of full time in the University of Michigan Medical School reached its climax and gave proof of its unsatisfactory application, the Regents wisely adopted resolutions in January, 1932, which promptly put an end to this controversy. It was argued that if a noted physician was willing to give two-thirds or three-fourths of his time to research and medical education, there was no reason why he should not be employed for these duties

and permitted to reserve one-third or one-fourth of his time for consultations, for which he might obtain fees commensurate with his quality of service. Accordingly, a resolution was adopted which permits appointees to the Medical Faculty to accept a full time or part time status in accordance with their wishes and the approval of the administrative bodies of the medical school and the university. Any one of professorial rank in a clinical department may have the privilege of requesting part time and if approved, accept a corresponding reduction in his salary consistent with the time devoted to the service of the university. Thus the Medical School as an institution is not in competition with its alumni and large salaries are not being paid to the members of the medical faculty from a pork barrel created by compelling them to surrender their fees to the university. It is of vital importance that our Medical School maintain a friendly rapport with the profession of the state and on the basis of our present methods of conducting the practice of medicine, both kindly and healthful relationships prevail.

In the Medical School of the University of Michigan, as in most of the medical schools of this country, both full time and part time men hold responsible positions in the clinical departments. It is impossible to distinguish one from the other in terms of service to our school. Each member of both groups is meeting his teaching assignments, promoting research to the best of his ability with the available facilities and staff, and exerting every effort to give considerate attention and skillful service to patients assigned to his department, whether they be state charges or private patients. From the standpoint of teaching qualifications, there is no distinction between the full time and part time men. In scholarly productivity, there are no outstanding differentiations between the full time and part time departments. In the care of the sick, both the full time and part time staffs render equally competent service. To outside investigators evaluating our clinical departments in respect to their teaching qualifications, scientific productivity and quality of medical service, no variance between the full time and part time departments would be possible. For the past thirteen years, we have assumed that both plans are consistent with American ideals and the best interests of the university. We have held to the belief that the fate of the Medical School does not depend upon full time or part time, but on the will and the spirit of its faculty.

Yet most of us will agree, I believe, that none of the plans is ideal, or perhaps even good. Some of them operate successfully, possess values which appear to be understood and accepted and outwardly, seem safe and secure. Not all of them, however, have been taken completely for granted. There is criticism today of academic tenure in medical education, violent criticism in some quarters from more than just the radical few and philosophically minded persons who habitually deride programs of any quality or merit.

Here I make an urgent plea. Is this not an auspicious time for a meeting of minds on this important matter? Is it not a challenge to this Association to bring together some sincere, honest and intelligent men from the ranks of medical educators, administrators, practitioners of medicine and the public to

investigate the fundamentals of academic tenure in medicine and to develop if possible, a unity of thought and agreement on this issue? To formulate a policy we need an honest, factual, non-emotional approach to the various phases of this activity. Some of us will say that we are not anxious to stir up debate on questions which cannot be solved; that the problem is a local one, better left to the intelligence of the administrators on the home ground, or that local situations are fraught with so many peculiar complexities that an analysis and appraisal of them by outsiders is futile. Adherence to this view, I believe, is missing the point—we would merely be shadow boxing. While most medical schools fortunately have individual characteristics, they are all parts of a national structure. We concern ourselves incisively with entrance requirements, recommend curricular changes and prescribe standards for accreditation, but veer sharply away from a consideration of the very foundation of our medical schools, the basic policies of administration. What we need now is some inexorable logic in dealing with this problem and a practical program of action. Many of the medical schools of this country today, although ominously silent on this point, need the unfailing support of the Association. This is no time for acrimonious dispute and internal disagreement in our institutions of higher learning. The period of reconversion is upon us. Members of our staffs who have given their services to the armed forces are returning to their academic positions and they are entitled to a hospitable welcome and a program which offers them an attractive future. There is every indication that within sixty days, we shall be deluged by returning service men seeking refresher and review courses in postgraduate medicine. Anyone who has recently visited our army installations will know that the morale among these medical officers is at an appallingly low ebb. With few exceptions, they are unhappy, restless, discouraged men, convinced that they are not in stride with the progress of medicine and wondering where they may be given a helping hand. They are looking wistfully toward our medical schools for rehabilitation, which no one will deny they richly deserve. Only through intelligent and competent administration of our medical schools and hospitals will the solidarity of purpose and action be achieved that will function for the best interest of undergraduate medical education and our broad programs for the re-education of returned service men in this period of reconstruction. It would be a sad commentary if, as a leading apostle of medical education in this country, the Association of American Medical Colleges were compelled to admit its inability to tackle this job step by step, direct opinion to the real issues and find solutions for the difficult problems of administration in our member institutions.

An Experiment in Teaching Freshman Medical Students*

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During the academic year 1943-1944, discussions among members of the preclinical faculty of the Emory University School of Medicine brought forth criticism of the present curriculum. A general dissatisfaction with the present program of instruction was expressed and there was a desire on the part of many for a radical revision. Among the defects pointed out were the following:

1. Too little allowance for adjustment in the transition from college to medical work.
2. An overcrowded schedule. (Table 1.)
3. A poorly balanced curriculum.
4. Insufficient correlation between courses.
5. Inadequate development of student initiative and desire to learn.

TABLE 1.—FIRST YEAR SCHEDULE

Hrs.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12	Histology	Biochem.	Histology	Biochem.	Histology	Biochem.
			Lunch			
1-4	Dissection	Dissection	Dissection	Dissection	Dissection	

Hrs.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12	Histology	Biochem.	Biochem.	Biochem.	Histology	Biochem.
			Lunch			
1-4	Dissection	Dissection	Dissection	Dissection	Dissection	

Hrs.	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12	Neuroanat.	Neuroanat.	Neuroanat.	Bacteriology	Bacteriology	Bacteriology
			Lunch			
1-4	Dissection	Dissection	Dissection	Dissection	Dissection	

SUMMARY OF HOURS

	1st Quarter	2nd Quarter	3rd Quarter
Bacteriology	.....	.....	132
Biochemistry	132	176	.....
Dissection	160	160	160
Histology	132	88	.....
Neuroanatomy	.....	.....	132
	424	424	424

While these discussions were in progress, a rare opportunity was afforded for the testing of some of the ideas proposed for correction of such defects. A change in Selective Service regulations made it imperative to admit nineteen civilian students as freshmen by the end of June, 1944, three months in ad-

* Departments of Anatomy and Biochemistry.

vance of the date which had been set for the matriculation of the next freshman class. One of us suggested that these young men be used to try out some of the suggestions for the improvement of the traditional curriculum. If unsuccessful, the experiment could be discontinued at the end of the first quarter and the experimental group could begin the regular schedule with the others of their class in September, 1944.

The chairmen of our respective departments made it possible for us to devote full time to the experiment and the preclinical faculty and the administration approved the arrangements.

GENERAL PLAN

The program was planned for six months with the understanding that if it proved unsatisfactory during the first quarter it would be discontinued when the regular portion of the class matriculated. The subject matter projected for the six months was essentially the same as that covered in the first two quarters of the normal curriculum: biochemistry, histology, embryology and gross anatomy of the head, neck, thorax, abdomen and pelvis. One of us undertook responsibility for anatomy and the other for biochemistry.

The chief features of the experimental program were:

1. De-emphasis of interdepartmental lines. Both instructors participated in the work directed by the other and all possible correlation between the various phases of the work was attempted. Moreover, concurrent schedules supplemented correlation at all times.
2. Informal instruction which strove at all times to make the student feel that we were all working together for the same result—his training and development.
3. Individual attention made possible by the small number in the group and the informality of the program.
4. Stimulation of initiative and responsibility by gradually shifting the instructors' emphasis to informal conferences rather than to routine laboratory supervision.
5. Decrease in the number of formal class hours, allowing for reading and study beyond classroom assignments. Reports on various topics were presented to the group by individual students. (Table 2.)

The program was begun at a slow tempo and gradually accelerated as orientation developed. At first, the instructor in charge was always in the laboratory giving needed assistance and stimulating independent work. But as the students developed the ability to proceed on their own initiative, there was less need for such supervision and by the end of the first quarter the instructor was able to turn his efforts toward conferences and discussions. A reading room was provided adjacent to the dissecting room and was restricted in use to members of this group. All had keys and, therefore, constant access to this room and the adjacent laboratory.

A general outline of all material to be presented was prepared before the work began, but the details were worked out week by week as the course progressed. Weekly schedules were prepared cooperatively by the two instructors and were always posted before the end of one week for the following week. Every effort toward correlation of material and concurrent scheduling of related material was made. Wherever possible, and it usually was, each of us attended the lectures and conferences given by the other. From time to time other members of the preclinical faculty gave special lectures. Seminar reports by the students were instituted early in the course and dealt with topics chosen by the students from a suggested list. Each student made two such reports, one of about twenty minutes' duration and another covering a wider subject of approximately one hour's duration. (Table 2.)

TABLE 2.—ILLUSTRATIONS OF SEMINAR TITLES.

Teratology	The dynamics of inflammation
Physiology of the placenta	Androgens
Visual purple	Growth hormone
Glandular changes during pregnancy	Hypothyroidism
Endocrine control of menstruation	Physiological effects of insulin
Physiological oxidation	Theories of urine formation
Regeneration of nerves	Reticuloendothelium
The kidney in relation to hypertension	

It should be noted that no selective factor was involved in the make-up of this group other than that they were civilians and accepted by this medical school. Moreover, the members of this group had no choice other than to submit as experimental subjects for the first quarter.

All doubts of the advisability of continuing the experiment vanished during the experiences of the first three months. Three of the nineteen men were not passing at the end of that time and were transferred to the regular group to begin their work again. Subsequently, all three of these men either left school or were dropped by the Committee on Promotions. A fourth man was borderline and was given his choice of continuing with either group. After much vacillation he regretfully chose to begin again on the basis that it was his only chance to repeat the work without penalty. He has made an average record with the regular group. The remaining fifteen men were quite anxious to continue the experiment and stated that they would be disappointed if they could not.

The second quarter began with fifteen men in continuation of the program developed during the first quarter. Toward the last of the second quarter, Dr. H. W. Ades used several periods for neuroanatomy. It was decided at the end of the quarter that the group would continue for a third quarter with work in neuroanatomy and on the extremities. In addition to such course work each man was assigned an extracurricular project (Table 3) either in the hospital or with a member of the faculty.

Fourteen of the remaining fifteen students completed the third quarter without difficulty. One was conditioned in the second quarter of gross anatomy and failed on the extremities and neuroanatomy in the third quarter. The condition

was later removed and he was allowed to repeat the work which he failed in the fourth quarter.

EVALUATION

The department of anatomy has tried several methods of correlation during the past few years and has used a concurrent schedule for most of that time. With this experience as a background, it was only a step further to try to tie biochemistry in with the structure of the human body. This was made one of the primary objectives in the experiment and was successfully achieved with the full cooperation of the biochemistry staff. Although one of us was responsible for the instruction in biochemistry, the chairman of the department, Dr. G. T. Lewis, was in complete sympathy with the experiment and participated in the work not only by giving special lectures but also by advising us in working out details whenever we called on him.

TABLE 3.—EXTRA-CURRICULAR PROJECTS.

No. of Students	Activity	Department Concerned
3	Central supply Laboratory X-ray	Emory Univ. Hospital
1	Research assistant—physical properties of organic liquids	Physics
1	Biochemical analysis of pigeon blood	Biology Biochemistry
2	Physiology of thyroid lab. assistants in Neuro.	Chemistry Biochemistry
2	Effect of anti-reticular-cytotoxic substance on reticulo-endothelial system—lab. assistants in Dental Anatomy	Anatomy
1	Technique in cytology and embryology	Biology
1	Technical assistants in Neuroanatomy	Anatomy
2	Study of relation of ovulation to estrus in the hamster	Anatomy
1	Analytical technique in Biochemistry	Biochemistry

The chief differences in the work under this experimental program may be summarized as follows:

1. *Adjustment Period.*—The close integration of this program made it possible to complete all organizational details and laboratory space assignments in the first period. Thereafter, laboratory work of an introductory nature was begun in histology and biochemistry. (Table 4.) By means of the study of the cell and its processes and a review of chemical procedures of basic importance (all of which is familiar to adequately trained premedical students) it was possible to begin medical work as the orderly continuation of premedical courses. Although cadavers were cleaned several days after classes opened, dissection was not begun until the second week and even then the daily assignments were rather short. Prior to beginning work on the cadaver several periods

were spent in examination of living bodies (their own) under guidance of an instructor. In our experience such an introductory program could be extended and implemented with even better results.

2. *Correlation.*—Consideration of the related chemical and physiological importance of histological and embryological structures was made possible by concurrent schedules and the work of both instructors in both courses. The departure from the usual sequence of presentation of biochemical material entailed no sacrifice of continuity since it served to coordinate chemistry with function and morphology. It was, of course, impossible to correlate all phases of biochemistry with anatomy. The inclusion of physiology in such a program would make possible more extensive correlation. Examples of our concurrent schedules are given in table 4.

TABLE 4.

Quarter I
Week 1

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12		orientation supplies—buying, placing, etc.	Man—organization. The cell—characteristics of living cell.	The germ cells—fertilization	The germ cells—fertilization Quiz week-end
			Lunch		
1-4		medical library for orientation	cell division	assign and clean cadaver	

Quarter I
Week 2

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12 seminar; orientation in biochemistry	cleavage and origin of germ layers	surface anatomy self and cadaver	Gross 1 superficial back	Gross 2 trap. and lat. dorsi mm.	Gross 3 superficial chest
			Lunch		
1-4 Biochemistry qual. tests	Biochemistry std. solns. pH	Biochemistry buffers determination of pH	Biochemistry anions, cations, standardization of acids and bases	Biochemistry Kjeldahl determination of N	

Quarter I
Week 3

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12 Gross 4 rhomboids lev. scap. m.	age—body form growth	Gross 6 axilla	chemistry quiz. anatomy of 10mm. pig.	seminar Gross 8 finish post. cerv. trian.	fundamental tissues
			Lunch		
1-4 Gross 5 pect. mm.	age—body form growth	Gross 7 post. cerv. triangle	anatomy 10mm. pig.	Gross 9 muscular triangle	

3. *Flexibility of Schedule.*—The limited number of both students and instructors made possible a flexibility of schedule by which time could be shifted from one laboratory to another almost at will. This proved valuable not only from the standpoint of correlation but also for emphasis on certain phases of the work.

4. *Individual Initiative.*—As adjustment to the medical program proceeded, emphasis was shifted to the development of individual initiative. The laboratory work in biochemistry was largely on an optional basis but absences from the

laboratory were rare. Two periods at the end of the second quarter were allowed for special projects for those students who wished to carry out special experiments not included in the laboratory manual. More than one half participated in this voluntary project. The ability to organize material for themselves was tested in biochemistry in which more lectures are necessary than in anatomy. Toward the end of the second quarter, reading assignments were given in several instances in lieu of lectures, with good results, as judged by quizzes. Dr.

TABLE 5.

Quarter I
Week 9

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12 Dissection superficial abdominal wall	Dissection deep abdominal wall	Dissection inguinal canal	Embryology G. I. tract	Dissection scrotum inguinal hernia	Dissection testis spermatic cord
		Lunch			
1-4 Dissection abdominal wall	Biochemistry enzymes (lecture and lab.)	Biochemistry enzymes (lecture and lab.)	Biochemistry enzymes (lecture and lab.)	Biochemistry seminar on work of Beaumont. Digestion. (Lecture and lab.)	

Quarter I
Week 10

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12 Dissection abdominal regions omenta	Dissection stomach esophagus peritoneum	Histology stomach	Dissection mesentery jejunum ileum	Dissection large intestine	Biochemistry Quiz; lecture: intestinal putrefaction detoxication
		Lunch			
1-4 Biochemistry gastric analysis—(lecture and lab.)	Biochemistry bile and digestion (lecture and lab.)	Biochemistry (lecture and absorption (lecture and lab.)	Histology small intestine	Dissection duodenum bile duct	

Quarter II
Week 1

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-12		Dissection kidneys suprarenals	Dissection ureter abdominal aorta	Dissection diaphragm inferior vena cava	Dissection lymphatics of abdomen
		Lunch			
1-4		Biochemistry lecture: gen. aspects role of liver in met. Bile pig. signif. and tests	Biochemistry kidney function in relation to body fluid comp. Normal urinary const.	Biochemistry normal urinary const. conjugation products in urine	

Ades volunteered an interesting comment after beginning his work in neuroanatomy during this same period. He stated that the group did not seem to be outstanding but that something had happened to them for they worked better and came out with better results than it was his custom to expect. By the third quarter it was possible to provide only a broad general outline of dissection, leaving the dissecting groups to work out details from a dissecting manual day by day.

5. *Accessory Facilities.*—Under wartime conditions medical students are housed in scattered houses, frequently alone. The medical library is in the University Hospital some distance from the classroom buildings. Moreover, the student traffic in the classroom buildings is heavy and there is no student lounge. As an antidote to conditions arising from this general situation, a comfortable reading and study room was prepared adjacent to and communicating with the dissecting room and equipped with outlets for microscope lamps. Here were kept reference books and some current scientific periodicals. Students not busy with the mechanics of dissection made good use of these facilities both day and night, yet were immediately available for observation of intricate dissection or for relieving their associates in dissection.

6. *Technique of Study.*—Every attempt was made to establish conditions conducive to the proper use of the laboratory as a place to learn. On the theory that students have too little time for study of their laboratory material, particularly in gross anatomy, the convenient reading and study room and access to the dissecting laboratory were provided as an essential part of this program. It was pointed out early and repeatedly that laboratory material and experiments are aids to the learning process and not additional drains on the students' time. It was urged that students study in advance only enough to be ready for the work of the laboratory, the subject of which was known in ample time; that they work out the dissection, examination, or experiment as rapidly as possible; and that they then study the material from laboratory procedures and textbook combined. With a limited number of cadavers (four and five men to the body) some students used the laboratory of gross anatomy regularly at night, doing most of their study at the dissecting table rather than in their room. Emphasis on such a technique has led to the establishment of both efficient study methods and valuable laboratory habits. In biochemistry profitable collaboration in routine experimental work was encouraged as a time-saving device where no special technic was involved. Sufficient time was allowed for writing up laboratory results and evaluating them. The students were made to realize that mechanical performance of chemical procedures in cook book fashion is of little value but that experiments carried out intelligently serve to demonstrate facts which might otherwise be poorly understood.

7. *Decrease in Scheduled Hours.*—There was little omission of material normally included in the curriculum but the careful planning of concurrent schedules and the emphasis on study methods and laboratory habits made for a more efficient use of time. Thus it was possible to cut appreciably the number of formal class and laboratory hours. This allowed leisure for outside reading. The students of this group worked no less than freshman students in this school generally do but they carried the burden with greater ease. Yet in our opinion they acquired a good basic understanding of the subjects included in their curriculum.

8. *Seminar Reports.*—Introduction to library work was made by means of seminar reports on topics related to current or recent class work. These served not only as a means of training the student in the use of the library but also as a stimulus for independent extracurricular reading in medical and scientific journals. The topics in many cases were suggested by the students themselves. It was purposely decided to have reports rather than term papers in order to provide an opportunity for practice in presentation of material before an audience. The seminar reports were handled in extraordinarily good fashion by most of this group.

9. *Student-instructor Relationship.*—The student-instructor ratio in this program was comparable to that in our traditional first year. However, due to the smallness of the group and the spirit of cooperation developed we feel that student-instructor relationship was more intimate, cordial, and understanding than is customary. It was possible to develop conditions under which, we feel, the exceptional student can develop better his abilities while the mediocre or average student is developing normally. Apparently the important factor was the small number of students for which each instructor was responsible at any one time. Division of a larger class into smaller sections would make possible comparable results.

10. *Student Interest.*—It is our impression that student interest in the work of the first year was better sustained under this program. Our experience is that gross anatomy and biochemistry must stand at opposite poles, one concerned primarily with the spatial relations of parts of the body, the other with invisible molecular changes which constantly occur in those structures during life. Histology and, even more, physiology may go a long way toward connecting these extremes in the mind of the student, thereby increasing the interest in both subjects and the facility for learning and remembering facts.

11. *Grading.*—As nearly as we can tell the grading of these students was based on the customary criteria. In general the grades were higher than in the usual classes even though the quizzes and exams seem to us to have been of comparable difficulty and the students were no better than the average in fundamental ability and in preparation.

None of these differences can be interpreted as radical. The collective result, however, seems to have been quite significant. All students completing the three-quarter program have liked it and have felt that it was more than satisfactory in its results.

It is unfortunate that there was no reasonable control for the experiment. No adequate basis for checking accomplishments of this group as opposed to the group in the regular schedule has been devised. One must, therefore, depend on impressions.

There was absolutely no selective factor involving ability active in group-

ing these men. The Premedical Adviser has stated that in his opinion the group was not up to the average of former classes. Yet in all ways, the group turned in at least an average performance and in several ways excelled.

CONCLUSION

The final proof of the value of this experiment must lie in the comparison of future work done by the two groups of students in competition and association with each other in subsequent courses and years in medical school. Such comparisons will be the only objective method of analysis.

We can say that the results of this experiment have convinced us that revision of our present freshman curriculum is desirable. A projection of the program to include the whole freshman class could be worked out whereby a single instructor would have under his supervision for one phase of the work a group of no more than twenty students. A rotating system along such lines would make possible more personal contact and understanding than can result under the present program and would permit correlation such as in our experiment. Moreover, we believe that physiology should be included in the freshman year to round out the work in anatomy and biochemistry.

Should such a change be contemplated it is our opinion that an absolute prerequisite must be the feeling on the part of the instructors concerned that such a program is desirable. This system will work profitably only if both instructors and students are fully aware of the objectives and the means of attaining them.

The Teaching of Psychopathology

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INTRODUCTION

In their discussion on "The Teaching of Abnormal Behavior," Ebaugh and Rymer state that about two-thirds of 67 medical schools in the United States, which were surveyed in 1940, offered courses in some kind of psychopathology. They further state, "The increasing recognition of the importance and rôle of psychopathology in psychiatric teaching has led to the wide acceptance of this course in the medical curriculum."

In fact, it appears that it will be but a short time until psychopathology is a separate, well defined, and fully recognized course in every medical school in America. The subject of psychopathology is related to that of psychiatry in the same manner that ordinary pathology is to somatic medicine. It is difficult to see how the subject of psychiatry can be well formulated and well presented to medical students unless it is preceded by adequate instruction in psychopathology (and that subject, in turn, by a good course of instruction in psychobiology).

It is generally recognized that the presentation of a course in psychopathology varies greatly in the different medical schools due to the varied training and interests of the instructors who teach the courses. In some schools psychopathology is essentially a course in abnormal psychology, while in others it is an introductory course in clinical psychiatry. But in many schools it is a distinct entity, being that branch of medical science which deals with the subject of the mechanisms of adjustment in those individuals who are designated as "abnormal."

In the past seven years, I have endeavored to present a course in psychopathology to sophomore students in the College of Medicine at the Ohio State University. The plans for this instruction and the actual conduct of the course have been subject to many evaluations and revisions. The amount of time that has been alloted to the course has been small: eleven one-hour periods per year, until last year when the number was increased to twenty-two. Due to the limitation in time, the class work has been limited entirely to discussions. A large number of case histories or portions of case histories are used to illustrate the didactic material as they require less time than the presentation of patients. It is hoped that time will be made available in the future for case demonstrations of selected material. The organization of the subject matter of the course is presented here as a possible contribution to better medical teaching in the important field of psychiatry.

GENERAL AIMS

We are motivated by several aims in the presentation of a course in psychopathology. These general aims may be listed briefly as: (1) to present mechanisms of maladjustment rather than clinical classifications; (2) to free the student from the common misconception that psychopathology deals with mechanisms that are strange, weird and not present in "normal" individuals; (3) to teach a psychosomatic orientation to general medicine and (4) to give the student some insight into the psychopathology of everyday life. These general aims are elaborated in the following paragraphs.

The majority of the writers who have expressed opinions concerning the purpose of a course of instruction in psychopathology have stressed the fact that it is the mechanisms rather than clinical classifications that should receive the emphasis. I am in full accord with this belief. Our course treats of the factors which lead to adaptation or adjustment under difficulty, and to the mechanisms which are used in difficult adjustments. Although little attention is paid to clinical diagnoses as such, it should be evident that a knowledge of the "why" and "how" of maladjustment should be of the greatest assistance in cataloging the clinical condition and in arriving at a rational form of treatment.

One of the most important contributions of an adequate course in psychopathology is the inculcation in the student's mind of the conception that psychopathology does not deal with something that is new, different, or apart from the mechanisms of the usual or psychobiological range of adjustment. It is helpful to draw a parallel with somatic physiology and somatic pathology. The medical student is instructed in the physiology of the heart before he is expected to learn about cardiac action in mitral stenosis. But in each instance the heart is performing as a physiological pump: the muscle is contracting, nerve impulses are passing, tissues are being nourished in the heart wall, etc. The heart in mitral stenosis is working under difficult conditions but the basic physiological mechanisms are still present. Similarly, in the case of the psychopathological individual, we see the operation of the usual mechanisms of adjustment, but we also see variations arising from overuse and neglect of some of these mechanisms. For example, everyone rationalizes and projects; but the maladjusted individual may have more need of these mechanisms than does the psychobiological one. Therefore, the difference in psychopathology is not in the nature of the mechanisms but in the use to which they are put. If the medical student can be convinced of this fact, he will have escaped the age old misconception that the maladjusted individual is "possessed." Originally, the psychiatric patient was supposed to have been possessed by evil spirits, later by witches, and rather generally today, by "bad ideas," "evil impulses," "crazy notions," "insane desires," etc.

A psychosomatic orientation is used in the presentation of the material. Mind and body are considered as aspects, and not as parts, of the total individual. There is no teaching that the mind influences the body or that the body influences the mind, rather the expression of maladjustment is studied in each aspect, and by techniques peculiar to that aspect. Hence, no distinction is made between "or-

ganic" and "functional." All functions, whether they be in the psychobiological or in the psychopathological range, are organ behavior and, as such, are both organic and functional at the same time.

Finally, the medical student should gain some insight into the mechanism of his own life, the lives of his family and friends and of society in general. He should gain new appreciations in literature, the arts, religion and politics through the study of psychopathology.

THE DOUBLE APPROACH METHOD OF PRESENTATION

There are two approaches to the study of the maladjusted individual: a cross section study of his personality as he now appears, and a longitudinal survey of his life from his earliest beginnings as an individual. The first of these approaches, the cross sectional view, cannot be avoided; it is the traditional, common, everyday approach of the physician to his patient. However, it is rather widely agreed that the longitudinal study of the personality is also desirable and even necessary; although the importance which is attached to it varies with different workers. The use of both of these approaches in the study of human maladjustment is strongly recommended.

The subject of psychopathology can be presented effectively by using both of these approaches and by employing the cross sectional study before the longitudinal survey is undertaken.

The cross sectional approach to maladjustment is the easier but shallower method. It takes the patient as he comes and describes him in terms of his relationships with his environmental setting. The longitudinal section technique is deeper and more time consuming. It is also less descriptive and more interpretive in nature than the cross section study, which is largely, but not entirely, descriptive.

The employment of the cross sectional study before attempting the longitudinal study gives the student time for the acquisition of a vocabulary. This is a distinct advantage since terminology is one of the great hurdles in psychopathology. The student is given time to gain a general impression of the nature of psychopathology and to make his own personal adjustments to that type of course material. In his second approach to psychopathology, he will attempt to understand the deeper, more difficult and more conjectural subjects of determinative factors, goals, and mechanisms in the life pattern.

PSYCHOPATHOLOGY AS REVEALED IN CROSS SECTION STUDIES OF MALADJUSTED INDIVIDUALS

Psychopathology is concerned with the person and his setting. Each contributes to the nature of his psychopathology (Malamud). If the relationship of the person to the environmental setting is analyzed in a very simple fashion, we find ourselves asking three questions: What does he perceive? What does he think? What does he do? In other words, the student should be instructed

in three fields: the psychopathology of reception, the psychopathology of cognition or intellection, and the psychopathology of expression. Expressed in a simple formula the material may be shown in this manner:

PSYCHOPATHOLOGY OF RECEPTION (the nature of the maladjusted person's picture of reality)	→	PSYCHOPATHOLOGY OF COGNITION (the nature of the maladjusted person's thinking)	→	PSYCHOPATHOLOGY OF EXPRESSION (the ways in which the maladjusted person relates himself to his environment)

In our course in psychopathology this material is arranged in five units, which may be formulated in this fashion.

1. PSYCHOPATHOLOGY OF RECEPTION.—The individual nature of the reality picture. The psychopathological need of such a large degree of individuation that distortion of reality results. The mechanisms by which reality is distorted. The definition of attitude, attentiveness and anxiety. The backgrounds for paresthesias, illusions, hallucinations and phobias.

2. PSYCHOPATHOLOGY OF COGNITION.—The development of the thinking process. Goals in thinking. Deviations in thinking, both qualitative such as flight of ideas, and quantitative as in wishful thinking and delusional thinking.

3. PSYCHOPATHOLOGY OF EXPRESSION.—*The Vegetative Aspect.* The viscera as tools of the total personality. Psychosomatic considerations in disease. The expression of psychopathology in the various organ systems.

4. PSYCHOPATHOLOGY OF EXPRESSION.—*The Somatic Aspect.* The expression of maladjustment at the somatic level. The expression of aggression in overt behavior, in disguised patterns and in self directed patterns. The phenomena of retreat and of regression.

5. PSYCHOPATHOLOGY OF EXPRESSION.—*The Sexual Aspect.* Individual and social aspects of psychosexual maturity. Masturbation, impotence, frigidity, exhibitionism, prostitution, homosexual practices and other sexual perversions.

In these discussions, emphasis is given to descriptive materials, with the naming and the describing of psychopathological phenomena as they are observed in patients. No particular attention is paid to clinical diagnoses as categories, but clinical material is used freely to demonstrate the phenomena. The emphasis is placed on how the individual is distorting reality, how he is showing variations in thought, and how he is using his effectors to express his maladjustment.

PSYCHOPATHOLOGY AS REVEALED IN LONGITUDINAL STUDIES OF MALADJUSTED INDIVIDUALS

The student who is equipped with a knowledge of the clinical appearance of psychopathological phenomena as they appear in cross sectional studies, either in case histories or in actual clinical cases, is ready to make the second and more difficult approach to the subject—the longitudinal approach. This involves a study of the life pattern as it exists from conception to death.

In our course, this material is arranged in nine units which is a modification of a scheme originally suggested by Dr. Smith Ely Jelliffe.

1. THE LIFE PATTERN IN LONGITUDINAL SECTION.—Levels in development. The growth of structuralized experience. Fixation and regression. Mechanisms in development.

2. THE ARCHAIC PERIOD (conception to birth).—Heredity and constitution. Amentias of genetic and intrauterine origins. Birth injuries.

3. THE ORGANIC PERIOD (birth to six years).—The organ neuroses, their development and fixation. Deviations in Ego development. Deviations in Super-Ego development.

4. THE NARCISSISTIC PERIOD (six to twelve or fourteen years).—Narcissistic fixations as shown in over-protection of the pain-pleasure principle and in a lack of capacity to invest love. Ego and Super-Ego deviations.

5. THE HOMOSEXUAL PERIOD (twelve to around eighteen years).—Homosexual fixations as they appear in the psychoneuroses, in some alcoholics, in some suicides, in paranoid attitudes and in sexual maladjustments.

6. THE HETEROSEXUAL PERIOD (eighteen to from forty to fifty-five years).—Damage to nervous tissue. Delirium and psychosis. Damage to non-nervous parts of the body. Threats to self-preservation and the loss of love objects.

7. THE INVOLUTIONAL PERIOD (from 40-55 to 55-70 years).—Involutional psychosis.

8. THE SENILE STAGE.—"Natural" aging. Psychosis with cerebral arteriosclerosis. Senile psychosis.

9. DEATH.—Death as an indirect goal, as an escape, as a result of developmental fixations, as self directed punishment, and as a result of introjection.

In these discussions emphasis is given to the subjects of the structuralizing of experience, fixation and regression, the fixed biological mechanisms in the life span, the formation of the Ego and Super-Ego, the protection of the Ego, and the dissolution of the neural machinery.

Either case histories or patients may be used to indicate psychopathological variations at the various periods of development and dissolution.

Such a course in psychopathology should be followed by clinical courses which use a knowledge of these mechanisms in the teaching of the diagnosis and treatment of neuropsychiatric patients.

SUMMARY

A course in psychopathology is described which appears to have the following advantages:

1. The scope of the course is all inclusive and the individual instructor can amplify, condense or omit certain parts without destroying the general plan of coverage of the subject.

2. The course is oriented both to the person and to his environment.

3. Stress is laid on mechanisms of adjustment under difficulty, not on clinical classifications in themselves. Clinical orientations are used continually but the emphasis is on the description of psychopathological phenomena and the reasons for them. Instruction is given in history taking and examination of patients with psychopathology.

4. Both the cross sectional and the longitudinal sectional approaches to the subject material and to the maladjusted person are utilized. In my opinion both approaches are necessary to a good coverage of the subject, but one approach may be emphasized at the expense of the other.

5. The material is arranged so that the easier descriptive, cross sectional approach is presented before the more difficult longitudinal sectional approach is attempted. This form of presentation also gives time for the acquisition of a necessary vocabulary.

6. The cross sectional study has a simple orientation—psychopathological phenomena in the three fields of reception, cognition and expression.

7. The longitudinal section study is oriented to the life span, from conception to death, and offers a workable background for a psychosomatic approach (if the instructor favors that approach).

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Some Suggested Improvements for Postwar Medical Schools

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The successes and glories of American medicine have been told and retold by the press, radio and movies so that almost every man, woman and child has become justly proud of them and correctly credits the public for making these wonders possible. On the other hand, the appalling failures of American medicine have received very little publicity. One occasionally sees a reference to the fact that about 45 per cent of draftees have been rejected in spite of lowered standards of the armed forces. This is a tragic percentage of unfit Americans when one considers that the men of draft age make up the group of citizens which one would expect to be the most healthy. At this age we would expect most of the congenitally defective individuals to have died and the infirmities of old age to enter the picture scarcely at all. No adequate statistics are available at present but the percentage of physically and mentally unfit among the younger and older age groups must be well over 50 per cent of the members of those groups. If adequate publicity could be given these facts, it is almost inconceivable that the American people would ignore them since it has always been in the best of our traditions to do something about our failures.

It is particularly important not only to "view with alarm" the situation but to offer whatever suggestions are possible as a remedy. This, I propose to do, within the limits of my ability, in the hope that adequate discussion may be stimulated and appropriate measures applied. I do not expect many people to agree with all of my suggestions, which are probably totally inadequate, and I sincerely hope that no one will consider any of them as a personal condemnation of any views which he may hold.

A situation of this kind requires fundamental and comprehensive revision. Knowledge of normal functions of the body must be extended as well as knowledge of abnormal conditions before great medical advances can be made. This will require intensive and extensive research in all fields of medical science by the most capable minds among us. Only in our medical schools can such research programs be provided. The most competent minds, great wisdom and a fair amount of financing will all be necessary.

It is certainly well known to all the members of medical school faculties that medical education has suffered greatly during the war. The premedical education of students has been shortened, the average age of admission has been lowered and the faculties depleted beyond the danger level. Teaching loads have

been so much increased that very little time or energy is left for creative research. However, the most dangerous situation, in regard to the postwar period, arises from the failure to provide for the training of future faculty members in the preclinical sciences. These are the men and women who have made and must continue to make the basic or "pure" scientific contributions so necessary for the future progress of medical science.

Only a few years ago, we seemed to have an oversupply of trained personnel to staff our schools. Where have they gone so quickly? Some are, of course, in the armed forces, often doing strictly routine work instead of the research and teaching so badly needed. Neither of our major allies, Russia nor Britain, has made this mistake in this war. Most of these men in the armed forces are on leaves of absence from their universities and some of them will return to their former positions at the end of the war if salaries are sufficient to support their families. Some of the younger ones who were called to the armed forces early in the war were on very low salaries but have received rapid promotions to the rank of Major or Lieutenant Colonel. Many of these have acquired family responsibilities which will make it quite impossible to go back to assistantships in universities. On the other hand, their army service has actually handicapped them so that they will need considerable time to reorient themselves before they are of much value to any school.

Although no accurate statistics are available, it is my impression that very many faculty members have left the medical schools for positions in industry. These positions are not in strictly war industry, are probably relatively permanent and offer excellent opportunities for extensive research at attractive salaries particularly in the large pharmaceutical houses. While they will continue to contribute to the progress of medical science their contributions to fundamental or pure science will be less. What is much more important, as a detriment to medical progress, is that these men are no longer available for the training of future scientists. Industry, by depleting the faculties of the universities, is running a grave risk of destroying its own future supply of trained scientific personnel. It seems possible to avert this danger, quickly enough, only by increasing university salaries and research opportunities to the industrial level or government provision for immediately starting the training of a large number of capable young men in the various sciences at the graduate level.

Another very serious drain on the faculties of our medical schools has been the shifting of full time clinical men to a part time status allowing them to engage in private practice. This is very largely the result of our low salary policy, slowness of promotions, increased cost of living and high income taxes resulting in the inability of these men to meet family responsibilities. With the scarcity of physicians, they have seen the opportunity to build well paying practices which should assure them freedom from financial worry in the postwar period. While a large percentage of these men will be the most capable physicians in their communities, their contributions to the future progress of medical science will not be great.

Thus, we see that for various reasons the faculties of our medical schools are at a dangerously low level. Replacements are not being provided in any substantial numbers, nor will they be until about six years after adequate training facilities are again available. It is already much too late to do much about those intervening years, but the tide should be turned at once to prevent our medical schools from degenerating into institutions in which only didactic clinical training can be given by inferior faculties. To state it much more bluntly, our medical colleges are in grave danger of degenerating into the category of medical high schools. Let us consider some practical remedies.

BUDGETS AND SALARIES

It is, by now, rather clearly recognized that the excellence of a university depends on the excellence of its faculty. Beautiful buildings may please the alumni but the products of the minds of the faculty train students and establish the reputation of the institution. To build a great faculty requires ample funds to pay salaries, maintain buildings and a good library, provide technical help and supply equipment and materials for teaching and research. At the present time very few medical schools have adequate budgets and this, to a very large extent, has been responsible for faculty depletions. I would, certainly, not advocate wasting funds. A serious estimate of the needs of a first rate medical school, admitting about 100 students per year and carrying on an excellent program of teaching and research, both undergraduate and graduate, leads me to believe that an annual operating budget of about $1,000,000, if carefully expended, would meet present requirements. Any building program or university hospital deficit should be provided from other sources. This would seem like a great deal of money, but if one considers the amount necessary to operate the 78 existing medical schools and prorates it on the basis of population, it would amount to about 60c per person per year, or less than the cost of the war for one-third of a day. Is this too big an investment in health for the American people? I do not believe it would be if they are given the facts. It might be possible that everyone would be willing to sacrifice one little postwar gadget a year to make this investment.

Salaries should be about double the present average, which would bring them in line with other professional incomes of the community. This is about the postwar range suggested by Dr. Chauncey Leake for the University of Texas, Medical Branch. These salaries should carry the stipulation that they are paid for both teaching and research on an equal basis. The faculty should be of such a size that one-half of the time is available for research, preferably arranged for about one-half of the year, if possible. Faculty members who are not actively engaged in research should be considered as being on half time and receive only one-half salaries. Preclinical and clinical full time salaries should be on the same scale. Scientists in Russia are said to be paid on the same scale as industrial

production executives and these salaries are the highest in the country. I do not believe such a high scale would be desirable in this country because it might serve to attract too many individuals with a business type mind into scientific work. What is really needed is a salary scale high enough to attract the best scientific type of mind into medical research and teaching. This kind of individual appears to do his best work when he has an income which gives his family and himself a comfortable living standard and financial security. I would suggest that salary ranges at the present cost of living and taxation should start at about $3,000 for beginning instructors and extend smoothly up through the scale to $20,000 for full professors of outstanding ability.

Faculty promotions and salary increases should be made on the basis of ability in both research and teaching. Because the evaluation of such ability is particularly difficult, I would suggest that initiation of promotions and salary increases should be in the hands of the department head who should be asked to submit his recommendations to a representative committee of the medical faculty. Once approved by this committee, final approval by the Dean and administrative officials should be almost automatic within the limits of the budget.

FACULTY AND STUDENT RELATIONSHIPS

The present trend throughout the world is to increase democracy. This has always been a difficult task where a society is heterogeneous. No group is much more homogeneous in interests and objectives than the faculty and students of a medical school. Here, if anywhere in the community, one would expect democracy to be sure to succeed. Both students and faculty should make every effort to work together in a spirit of friendliness and cooperation. Students should consider members of the faculty as older and more experienced students of medical science who are still trying to learn by active study and investigation. Faculty members should try to see students as younger and less experienced colleagues trying to master the fundamentals of the profession.

It would seem that such matters as class attendance, cheating and various disciplinary actions should be in the hands of students or student committees. This should help to develop initiative and self reliance so necessary for success in the medical profession.

THE DEANSHIP

Traditionally, the Dean is the representative of the faculty who acts always in regard to faculty wishes and in the interests of its members. He is not properly an administrative official, should receive all of his power and authority from the faculty and none from the administrative officials of the university. One of his chief duties should be to get adequate funds for proper maintenance and operation. He should be the executive officer of the faculty carrying out the policies arrived at in faculty meetings.

Since the beginning of the war, the duties of a dean have been increased so greatly that it is almost impossible for them to be done. His office has had to keep medical students and faculty members out of the clutches of over enthusiastic draft boards. He has had to be informed on all matters concerning draft regulations as applied to faculty and students. He has had to work with Army and Navy officials in regard to premedical and medical students. He has had to attempt to keep, at least, a competent skeleton faculty together and keep its members working on an almost impossibly accelerated program in the face of tremendous outside competition for their services at livable incomes. Most of our deans have done an excellent job considering the circumstances. Our own school has been most fortunate. Although we have had many faculty losses, all have left with regret, feeling that our Dean has done everything for them that he could.

I would suggest that deans should be elected by the faculty for a term of two years subject, of course, to the approval of the proper administrative officials. There should be no limitation on reelection.

CONSULTATION PRIVILEGES FOR FACULTY MEMBERS

The main argument for consultation privileges is to provide a method by which the community may avail itself of the services of expert full time men. It also serves to develop interest and pride in the community for the medical school. Against these advantages it can be said that some schools have allowed consultation privileges to certain faculty members to increase their earnings and thus avoid the necessity of paying an adequate salary. Another disadvantage of allowing consultation privileges is that the time used seriously interferes with the research and teaching program of the individual. Unless all members of a faculty are given consultation privileges, jealousies are likely to develop.

In order to provide the desirable features of consultation privileges, I would suggest that they be given equally to all members of the faculty, that the school collect all fees and add them to the research fund. Consultation time should be limited so there will be no interference with the important research and teaching duties. Thus, expert services of the preclinical faculty would be available to industry and of the clinical faculty to members of the medical profession. Schools would not be able under this plan to use consultation privileges as an excuse to pay inadequate salaries.

MEDICAL RESEARCH

It is highly desirable that the research carried on in medical schools in the post war period be of a fundamental or "pure" nature. This is the type which will be done nowhere else in adequate amounts. No attempt should be made to regiment research work, but cooperation between individuals and departments should be encouraged. It is, of course, most essential that adequate facilities be available, and ample, well trained technical help be provided.

The full time faculty members could well leave to the part time men the field of interesting case reports, autopsy studies and statistical papers. It is about the only type of scientific work which they have time and facilities to do.

MISCELLANEOUS

Premedical education should be brought under closer supervision of the medical faculty in order to promote its effectiveness and eliminate unfit prospective medical students before admission to the medical schools.

When the present accelerated program is dropped, it would seem highly desirable to increase the school year to about forty weeks without increasing the number of scheduled hours. This would permit medical students to digest the enormous mass of material presented to them and do considerably more library work. There would still be ample time for vacations and holidays.

SUMMARY

Certain suggestions have been made for what is hoped might result in better medical schools for the postwar period. These suggestions, it is hoped, taken with others already published or in the process of preparation, may add a few ideas to the solution of a most important problem. The most important problem is to recruit the best possible scientific minds for the faculties of our medical schools and to give these men through their own individual enterprise a chance to achieve important scientific results, a reasonable standard of living and a real opportunity for advancement. The health of the American people will ultimately be determined by the quality of our medical schools.

The Neurological Training Required by the Psychiatrist*

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During a lectureship at the University of California Medical School, I was requested to address the psychiatric group informally about certain relationships between neurology and psychiatry. Specifically the younger men expressed interest in the neurological training required of the clinical psychiatrist. While formulating my ideas it occurred to me that changing concepts have again made the subject timely.

The history of the relationship is so well known that only a few comments will be made on this phase. The Continentals and the English early set the tone, when neurology dominated the partnership. "Dominated" is a moderated term in this instance; the neurologist who had the temerity to become interested in psychological medicine (e. g. Freud) was usually ostracized. Under this repression the specialty of psychiatry was poorly nurtured, and with notable exceptions only mediocrely equipped persons were willing to accept the despised rôle.

Psychiatry, it seems, is still somewhat under the influence of this philosophy and will be, until this or probably the next generation takes over its direction. For decades its protagonists, in this country at least, unfortunately have bred too true to type.

Those men in training or those about to enter it want guidance. This was a reason prompting my discussion with some of them. One hasn't the desire to be dogmatic, but I am willing to go on record at this time with my thoughts about these things. I would rather talk about them informally than to write about them, since misunderstanding would thus be minimized.

It seems to me that the discipline of neurology has a minor place in the postgraduate training of the clinical psychiatrist. On statistical grounds alone, which may represent a least common denominator, the psychiatrist must deal with problems related with a considerably greater frequency to specialties other than neurology.

May it not be more to the point if extra-psychological training is to be required of the psychiatrist, to have it in pediatrics or in internal medicine or even in surgery? Every patient has his psychological facet, and that aspect of the clientele of pediatrics, internal medicine, and surgery is overwhelmingly the more frequent and important.

Whenever such tenets are enunciated one always is presented with the seem-

* From the Neurological Service and Laboratory of Neuropathology of the Cincinnati General Hospital and University of Cincinnati College of Medicine.
An informal address delivered at the Langley Porter Clinic of the University of California Medical School on February 12, 1946.

ing objection that the psychiatrist must know how to recognize such conditions as brain tumor and dementia paralytica. This is certainly true, but how much more it should be true of the physician who so often refers these cases to the psychiatrist.

Parenthetically it might as well be admitted that in the best regulated clinics the occasional brain tumor reaches the autopsy table undisturbed. This does not represent anything but an intellectual calamity as far as the gliomas are concerned, considering the present state of our knowledge of these miserable tumors.

Like all physicians, the psychiatrist should know enough of the local technique of neurology to survey his patient accordingly. If he does not observe the gait, and have a look at the eye grounds, pupils and reflexes he will occasionally get what he deserves. It takes about three minutes to perform a neurological survey, at which the physician may be relatively adept by the time he leaves medical school.

The psychiatrist should know well the cerebrospinal fluid and its diagnostic possibilities, and he should have a working knowledge of the other laboratory tools of neurology.

In discussions relating to psychiatric training, that ogre, the American Board of Psychiatry and Neurology, usually is interjected. I hope no one will argue the point of neurological orientation of this organization. I need not recite its requirements for neurological knowledge.

The influence of this Board has not been detrimental to psychiatry; on the contrary, it has probably been helpful. Inept psychiatrists who represent the bulk of the order, have tended to reproduce prototypes and thereby perpetuate the fog under which psychiatry continues to operate. With the neurological dominance of the Board, there can be little question that the quality of the order is being painfully improved. There are, of course, other reasons for the improvement.

No doubt when psychiatry is equipped to assume its rightful place in the hierarchy it will divorce neurology. It will not be in position to do this until there are enough topflight men in the field, who, largely by their own weight, are able to continue psychiatry on its upward path.

Now for the practical question of whether or not the physician interested in psychiatry should take neurological training. Ideally he should obtain the neurology that he needs in his undergraduate studies, just as he should acquire other extra-psychiatric disciplines. Such idealism requires that neurology be well taught in the medical school, as undoubtedly it should be but, as a rule, is not. Since medicine, pediatrics and surgery have occupied the student clinically to the exclusion of neurology, the latter is, at present, largely a postgraduate subject. Here may be the reason that cerebral tumor assumes the characteristics of a specter.

Realism usually takes precedent over idealism in the healthy organism. The present censor of the specialty of psychiatry as well as its efficient practice re-

quires certain neurological knowledge, which undergraduate instruction is not yet willing or prepared to encompass. Therefore, until teaching (and particularly the teaching of psychiatry) is improved, it seems that neurological exposure will be required of the clinical psychiatrist. There can be no question that such training is better absorbed with maturity, when the physician is reasonably motivated toward the discipline.

At Cincinnati, we have maintained a completely informal attitude about methods by which postgraduate, neurological training may be obtained. Some of the house officers in internal medicine have been rotated through neurology. Within several months we think they acquire the grounding that will allow them to handle the usual neurological case, and also to recognize when they are above their depth. The record of these men in practice appears to bear this out.

On one occasion, two residents were appointed to psychiatry, both of whom were interested in more thorough neurological training. These men divided their service between psychiatry and neurology and have been happy about it to date, five years later.

There should be the opportunity in the hospital with active medical school ties, for the house officer in internal medicine, pediatrics, psychiatry, or neurosurgery to have a short term of service on neurology should he want it. This leads naturally to the position of neurology in present day medicine, which I want to discuss in a subsequent article.[1]

At Cincinnati we have striven for the emancipation of psychiatry and at the same time have worked toward the interrelationship of that discipline in all fields of medical endeavor. The student is the first to sense the consent lent psychiatry by the members of other departments. Approval could not of course be given unless the approved were alert and capable.

In our school, an encouraging number of the best students has become interested in a psychiatric career. This augurs well for the discipline, since previously it attracted material, as a rule, not quite so desirable. A continuance of this trend will produce a body of physicians, not as passive as their predecessors, who, as I see it, will be mature enough to indicate to this domineering father, neurology,[1] exactly what is the relationship of psychiatry to neurology rather than vice versa.

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Medical Literature and Its Relation to Scientific Method

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Medical students, with few exceptions, notwithstanding their premedical preparation in the sciences, enter medical school with little or no concept or appreciation as to what constitutes a science or scientific method. The innumerable experiments they have performed hold little meaning for them. To most it is simply a group of procedures they must follow in order to obtain certain desired results. Results which in many cases can be obtained beforehand if one cares to read his text. As to the conclusions to be drawn from one's results, they can all too often be obtained simply by asking the instructor. Of the immense amount of work, thought, reason and logic necessary for the working out of each experiment, they have little knowledge or appreciation. Of their inheritance bequeathed to them by a long line of philosophers, scientists and scholars through the centuries as to what constitutes proper scientific method, they know nothing.

In order to instill in the students some appreciation of how important a knowledge of the literature can be to them, it was found necessary to stress the relationship between medical literature and scientific method in the course in Medical Bibliography for the first year students.[1] This was done by outlining briefly the development of scientific method from antiquity to our present day.

It has proven rather surprising to the students to have pointed out to them that the simple expedient of experimenting or demonstrating had never occurred to the ancients. Their interpretation of nature was quite different from our concept of science, a study based on observation and verification. It was not until many centuries had passed in the history of civilization that Thales, a Greek philosopher, attempted to offer an explanation of nature without invoking the aid of any power outside of his own observations. However, it remained for the Greek physicians to point the way to the true scientific method. This they did by faithfully recording their observations.

By his observations and descriptions of animals, Aristotle gave us the beginning of biology, but unfortunately in his early life he came under the influence of the teachings of the Greek philosophers who emphasized the rational factor at the expense of observation. As a consequence of this training Aristotle formulated his concepts of the structure of the universe based purely on deductive reasoning, which had an unhealthy influence on the development of science for centuries to come.

Following Aristotle, Greek culture was transferred to Alexandria, and there under the liberal minded Ptolemies, the arts and sciences were cultivated. But gradually, as learning deteriorated, scholars failed to appreciate the scientific methods of the Greeks, and science degenerated into a philosophical attempt to explain nature. The ancient period of medicine closes with the name of the physician who ranks after Hippocrates as the greatest of the Greek physicians.

This was Galen, who, notwithstanding all the good he did in the field of experimental physiology, also did a great deal of harm, for he broke down the Hippocratic method of utilizing clinical observations as the basis of medicine and substituted abstract reasoning for concrete facts. It was his self assurance that established his writings as an authority for the next 1,000 years.

It is to the Arabs that in a large measure we owe the preservation of Greek scientific thought, while learning was at such a low ebb in Western Europe. When the Arabs conquered Spain, they established centers of learning and there and in the kingdom of the "Sicilies" the work of retranslating Greek manuscripts, which had been translated into the Arabic, was undertaken by Mohammedan and Hebraic scholars. Partly as the result of the re-introduction of Greek culture into Europe and partly because the study of the sciences had never entirely died out, particularly that of astronomy, there was created during the 13th century a revival in the study of the sciences. That is, a study based on observation and empirical verification. The Scholastics gave an impetus to the advancement of science by placing the church's approval on the study of the works of Aristotle, and by implanting in man's mind the fact that nature was understandable. Probably through experiences, man began once again to learn a few facts and to make some observations which lent encouragement to verification through their own observations. Therefore, when the philosophers began to check their hypotheses by experimentation, science had reached our modern era.

The greatest year in the history of scientific thought is 1543. The year which saw the publication of the works of Vesalius and Copernicus. Here at last were two works given to the world that were based entirely upon their authors' own observations. The publication of these works was followed by the arrival of Greek scholars fleeing from the Turks carrying with them Greek manuscripts. This also served to stimulate the study of science by the new methods, which by then were becoming known. It is to the philosophers of the 17th century, and those of the 19th, who formulated the principles of scientific investigation that we owe our understanding of proper scientific procedures.

Following the introduction of the new methods of investigation, so many new facts were discovered that it became necessary to develop a means by which these new facts might be recorded and publicized. Accordingly, scientific journalism was born with the publication of the Journal des Sçavans in 1665. This journal was followed by a multiplicity of journals, transactions, books and other forms of scientific literature, all assisting in the dissemination of scientific knowledge.

This literature in time became so large that it became necessary for a group of specialists to organize this material so it could be utilized by the scientists in their investigations. Accordingly, we had the development of the Art of Librarianship for this purpose.

In order to facilitate or explain the relation between medical literature and scientific method, use has been made of the classificatory scheme elaborated by Wolf[2] (see appendix). According to this classification, scientific method is of two distinct classes, the logical and technical. The logical method, the process

of reasoning according to the nature of the data obtained, is more or less common to all the sciences and can be divided into two groups, observation and inference. Observation can also be broken down into two parts; bare observation, which refers to the observation of phenomena under conditions which cannot be controlled, and experiment, the observation of phenomena which can be controlled. Inference likewise is of two types: induction and deduction. Broadly speaking, induction is the interpretation of facts, while deduction is the interpretation of sentences assumed to be true.

However, it is the technical methods which seem to be the more confusing to the students. It is hard at first for them to realize that technical methods are the means by which facts are assembled to bring into play the logical methods. In other words, the technical methods are the means to an end, not the end. They are aids either to observation or to inference. In this classification the technical methods of medical science were grouped as follows: (see appendix) physical findings, laboratory findings, surgical findings, psychological findings and a knowledge of the literature. Each one of these methods has certain techniques, skills and procedures all designed for the assembling of facts. Likewise a knowledge of the literature is classed as a technical method, for it also is designed for the purpose of assembling facts.

When medical literature was small it probably was a simple task to compile all the facts in the literature pertaining to any subject under investigation, but as medical literature continued to grow it became necessary to develop certain skills and techniques in order to assemble the facts as recorded in the literature. Therefore, the ability to utilize medical literature has become an art in itself, necessitating some training. This art requires a knowledge of the various bibliographical and reference tools, the use of catalogs, indexes and certainly the principles of bibliographical citation, which is of the utmost importance in the preparation of articles of any scientific value.

This, then, is somewhat the outline which is followed in stressing the relationship between medical literature and scientific method, and how important a knowledge of the literature is to anyone desiring to practice proper scientific procedures.

APPENDIX

Scientific Method
(A. Wolf)

Logical Methods	Technical Methods (Medicine) (W. D. Postell)
1. Observation	
A. Bare observation	1. Physical findings
B. Experiment	2. Laboratory findings
2. Inference	3. Surgical findings
A. Induction	4. Psychological findings
B. Deduction	5. Knowledge of the literature

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Effects of the War Program on the Progress of Medical Students

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For approximately two years, medical schools have been operating under the most unusual combination of circumstances ever to arise. First came the idea of acceleration: the elimination of all summer vacations and the program whereby a student graduated thirty-six months from the date of his enrollment. Then came the A.S.T.P. and the V-12 to absorb some 80 per cent of medical school enrollment, providing all fees, required equipment and books, clothing, military control, a limited amount of drill and a few lectures on military subjects, barracks for some, a liberal subsistence allowance for the rest, salaries for all and allotments for dependents. Now that the military programs seem to be going into an eclipse, a comparative evaluation of results seems pertinent.

In the November, 1943, number of the JOURNAL OF THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES, I reported on the attendance and graduation records of one complete class in medicine at the University of Illinois. That class, totaling 160 students, enrolled in September, 1939, and graduated in March, 1943. The class was entirely civilian, entirely self supporting and was only accelerated by three months. These students were not greatly affected by the war, or bothered by Selective Service, as they were all granted reserve commissions on request.

The class which entered in June, 1943, was also selected by the medical school faculty, but immediately after registration, the V-12 and the A.S.T.P. entered in very large numbers. One hundred forty out of 171, or more than 80 per cent of the class, are in uniform. Since they have completed well over two years of medical school work and are now half through their third year, comparisons with the data of the earlier class may be reasonably valid—and certainly interesting. To help in the discussion the earlier civilian class will be called "1939" and the other "1943."

Of the 171 who started in June, 1943, 155, or 90.7 per cent, are still in the class. This looks very well when compared with the 71.9 per cent of the 1939 class who graduated on schedule. Twenty-five of the 1939 class, as compared with 12 of the 1943 class, were scholastic casualties. Better financial provisions, fear of active military service following failure, even a tender hearted faculty, all may have contributed to this difference. Probably, the elimination of financial worries and outside employment should be given the major share of the credit.

Eight of the 1939 class were either eliminated or lost time because of financial troubles; none of the 1943 class, whether in uniform or not, lost time for this reason. Seven of the 1939 class lost time because of health factors; to date

only one of the 1943 class (a service man) has had this difficulty. The latter class has been entirely on the accelerated program, having no long vacations since enrolling in medical school. It would appear that the elimination of the need for remunerative employment by medical students, although on an accelerated program, has resulted in a definite regularizing of the attendance.

A comparison of the ages of the two groups shows a somewhat greater difference than would ordinarily be expected. The median of the ages of the 1943 class on their first day in the College of Medicine was 20.68, while of the 1939 class it was 21.81. The admission requirements were the same number of semester hours (88) but the urgency of the war and the pressure of Selective Service had undoubtedly caused most applicants to press forward through their premedical work much more rapidly than usual. The unaccelerated medical program required three years and nine months elapsed time between matriculation and graduation. Adding three years and nine months to the 1939 median age gives 25.56 years while adding an even three years to the 1943 median results in the figure of 23.68. Hence, this war class will graduate almost two years younger than the ordinary class under peace time conditions.

In summary, these data show that with two comparable classes, admitted with the same scholastic requirements, one entirely civilian and largely unaccelerated, and the other largely in uniform and entirely accelerated, the uniformed class has made better progress and has had fewer scholastic and health casualties. The combination of accelerating the program and the general pressure and urgency of war has resulted in a very great lowering of the age of graduation —practically two years.

It might be noted that two young women in the 1943 class, both with excellent scholarship, have withdrawn temporarily to be with husbands in the military service who expect overseas duty soon. Thus the war affects student progress in unexpected ways.

The Royal College of Physicians

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The Royal College of Physicians of London, the first medical corporation in Britain, was founded in 1518 by King Henry VIII on the advice and recommendation of his Chancellor, Cardinal Wolsey, and the "humble petition" of Dr. Thomas Linacre, physician to the King and the Cardinal, and of other prominent physicians of that time.

Linacre was the first president of the college and its early activities seem to have been mainly of a repressive kind. Powers were granted to allow the college the control of the practice of medicine in the precincts of London—that is in the old city and within seven miles of its boundaries.

Actually its activities were even more widely extended, by certain clauses in the original charter, to the whole of England, for it was laid down that no one, except a graduate of Oxford or Cambridge, could practice medicine in England unless he had been examined and approved by the appropriate officers of the college.

Broadly speaking it may be said that the college was founded to keep the practice of medicine an honorable profession and not a trade. Hence it is common to find in the early statutes and later additional charters frequent allusions to repressive measures against the apothecaries—those who dispensed and sold drugs —who were clearly threatening to debase the medical art of the fifteenth and sixteenth centuries.

But Linacre wanted something more than repression. He sought, by bringing leading physicians into close association, to foster friendly relations and promote research into the cause and cure of disease.

At first the meetings of the college were held in Linacre's house in the City of London. In 1587 a garden was acquired so that herbs could be grown, but by the beginning of the next century the premises were quite inadequate for their purpose and a house was obtained in Amen Corner, close to St. Paul's Cathedral, London, and here the college moved in 1614.

The next important event in the history of the college was undoubtedly one which had the greatest influence upon its development, and indeed upon medical progress not only in London and Britain but throughout the world. In 1582 Lord Lumley had founded a Lectureship, the first of many in the college's activities, and in 1615 Dr. William Harvey was elected to hold the office of Lumleian Lecturer, a position which he retained until his resignation in 1656.

In 1616, shortly after the college had begun to meet in the new premises in Amen Corner, Harvey started his lectures and chose as his subject the cir-

culation of the blood. As is well known, he revolutionized the whole conception of the functions of the heart and circulation and opened the way to the development of modern physiology.

But Harvey did more than lecture at the college. He became its most princely benefactor. A museum and library were added to the premises at Amen Corner and were opened in 1651. It was made known that the college owed these amenities to Harvey's generosity. When he died in 1657 he left his country estates to the college for the purpose of maintaining the library and also of promoting friendship among the fellows of the college by an annual banquet.

Thus every year on St. Luke's Day, October 18, a Harveian Orator, nominated by the president, delivers an address and this is followed (in normal times) by a dinner when the pious memory of Harvey is duly honored.

In 1666 the Great Fire of London destroyed the college, and Sir Christopher Wren, the architect of St. Paul's Cathedral, designed a new building in Warwick Lane, just to the west of the city boundary. But in succeeding years London spread enormously and professional activities became increasingly centered in the new western outskirts.

Hence in the nineteenth century yet another new home was built at a corner of Trafalgar Square, London, opened in 1825 and still the site of the college, although damaged by air attack.

The president of the college is elected each year "on the Monday after Palm Sunday." Four "Censors" act as examiners for the M.R.C.P. examination (see below) and the Censors' Board also deals with disciplinary matters. Other college officers are the treasurer (the office dating from 1583), the registrar (from 1579), the librarian and the assistant registrar. A Council manages its main affairs and all the fellows are summoned to six meetings in the year to discuss college business.

The College Roll consists of Licentiates, Members and Fellows. The L.R.C.P. is granted, after examination, in association now with the Membership of the Royal College of Surgeons of England and together constitute a qualification which entitles the holder to practice all branches of medicine, surgery and midwifery. (The same joint machinery deals with special diplomas, such as the Diploma in Public Health.)

Members are elected by a general meeting of fellows after examination by the Censors' Board, and the M.R.C.P. is a much coveted higher diploma in medicine. Fellows are elected annually from among the members by a general meeting of all fellows; every fellow has a duty to make nominations for preliminary consideration by the Council, who make recommendations to the general meeting.

In addition to its dominant interest in medical education and the maintenance of a high professional standard, the college has many other activities. Each year it elects several important lecturers, and through its Science Committee

administers several scholarships for medical research. An important development in this field just over ten years ago was the inauguration of special research into modern problems of tuberculosis under the terms of the "Prophit Bequest." The college is responsible for the official "Nomenclature of Disease," revised every ten years. In its library, founded on Linacre's private collection in the sixteenth century and enriched by many benefactors, the college possesses many valuable treasures.

In modern times the college has been frequently consulted by the British Government on current problems of medical organization and practice. The president is much in demand for membership of official committees and the college has its representatives on many public bodies.

Most important work is now being carried out in relation to the Government's proposals for a national medical service. At the request of the Ministry of Health the college has organized the preparation of a complete list of consultants and specialists, and in its Consultant Services Committee, a body widely representative of all consultant and specialist interests, it is hammering out a scheme for the consultant section of the new health service, a scheme which is also closely concerned with the likely developments of the hospital services.

In this important task, as in many of its recent activities, the College of Physicians works in close collaboration with its sister colleges, the Royal College of Surgeons of England and the Royal College of Obstetricians and Gynecologists. In addition there is a Standing Joint Committee of the three colleges which meets regularly to discuss mutual affairs.

Before the outbreak of war in 1939 it set up, in association with the College of Surgeons, a special Committee of Reference to grade all specialists for the Services, a scheme which has proved of the greatest value. Recently the College Planning Committee produced proposals for the reform of medical education. College committees on Social and Preventive Medicine, on Psychology and on Pediatrics are investigating and producing suggestions for the reform of medical education and practice in these special branches.

Thus for over four hundred years the Royal College of Physicians of London has played an important part in shaping the medical affairs of Britain, and it looks forward to the future with calm confidence that the accumulated knowledge and experience of its fellows will be readily available for the help and guidance of those concerned with every aspect of the health and well-being of the community.

Guy's Hospital to Rise Again

CELIA BENSON*
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From the bomb battered ruins of historic Guy's Hospital, London's world famous center of healing, there will arise in the years following the war a new Guy's. It will be equipped with every modern appliance to carry on the old tradition of constant service to the community—a tradition established through more than two centuries of productive work, ever changing in character with the progress of medicine but never changing in its spirit.

In a talk I had with Professor T. B. Johnston, M.D., the Superintendent of the hospital, I learned something of the plans now being discussed for future developments.

"Guy's," he said, "like the other London Teaching Hospitals, has a triple function to perform. It must provide the highest possible standard of treatment for its patients; it must educate and train its quota of medical students and nurses—men and women who go out into every corner of the British Empire—and it must contribute to the advance of medical knowledge by the researches of its staff.

"There is much talk at the present time of Social Medicine and Rehabilitation. The new Guy's will be well fitted to play its part in both fields. It will be the first Teaching Hospital in Britain to have attached to it a special Clinic for the in-patient treatment of the psycho-neuroses, those mental upsets which the ordinary practitioner has not hitherto been trained to treat. The Clinic has recently come into operation and it has already done invaluable work in restoring normal mental health to Service Officers suffering from exhaustion, overstrain and anxiety neuroses, arising from their experience on the battlefields of Europe.

"The Clinic will work in close association with the out-patient department of Psychological Medicine and its Child Guidance Clinic, and it is in connection with these aspects of Social Medicine that Guy's will make its contribution."

He then went on to discuss an entirely new development in which the hospital is the pioneer.

"Guy's is now exploring the possibilities of providing dental treatment for patients whose teeth require attention, even though their dental condition is not necessarily connected with the disease for which they were admitted."

"This was started more than a year ago at the Hospital Annex in Sevenoaks, Kent, which we have named 'Guy's U. S. A. Hospital' in token of our indebtedness to the Hollywood Branch of that wonderful organization 'Bundles for Britain,' which has proved such a friend indeed to the hospitals of this country and which provided us with equipment on a most lavish scale.

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* British journalist who has specialized in health and medical subjects.

"At this hospital, every Service patient and a high percentage of civilian patients have been submitted to dental examination and the treatment necessary carried out under the supervision of a skilled dental surgeon.

"If we are able to continue this procedure in the new hospital—where it would be on a very much larger scale—we will make an important contribution to the dental health of the nation.

"I hope, too, that a new professional appointment in the Dental School will be instituted—the rebuilding of the Guy's Dental School, which is the largest in the country, is included in the plans—with, as its principal aim, an intensive study of the relations between diseases of the teeth and diseases of other organs and systems of the body."

Professor Johnston next outlined the replanning of the Out-Patient Department, which is a vital part of the work of a Teaching Hospital.

"At Guy's, out-patient work is now entirely consultative in character. Patients attend by appointment, and this effects a substantial saving of time not only to the patient but also to the consultant.

"Consultations on individual cases between two or more consultants are of everyday occurrence in the Teaching Hospitals, and, as they take place in the presence of students, they are not only to the advantage of the patient but are also of high educational value.

"For many years before the war," Professor Johnston continued, "we had felt that the number of beds available for clinical teaching at Guy's was too small, and now we are planning to have a total of 1,000 beds on the site. Like all other Teaching Hospitals, we have to provide a complete range of medical services not only for the local population but also for patients from more distant areas, and, as a rule, no fewer than forty per cent of the patients are normally resident outside the London area.

"As regards rehabilitation," he went on, "the final degree of restoration of function and the length of the period during which rehabilitation has to be carried on depends, in a very high percentage of cases, on the treatment carried out in the earliest stages, especially when fractures of bones are involved.

"With a view to subsequent rehabilitation, it will be all-important to ensure that the patient who has suffered an accident should be transported, in the first instance, direct to a hospital which is properly equipped to deal with him and has the necessary expert staff, even though this may involve a journey of forty or fifty miles.

"In this connection, the institution of a National Ambulance Service is a crying need.

"Despite the fact that, throughout the war, the various local ambulance services of the nation have carried out their work with a degree of efficiency which reflects the greatest credit on all those concerned, a National Ambulance Service, properly controlled, would have made the problem of rehabilitation easier of solution and its cost to the nation in man-power very much less."

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The Pittsburgh Meeting

The fifty-sixth annual meeting of the Association of American Medical Colleges surpassed all expectations. Called late because of former Office of Defense Transportation restrictions, final arrangements for the meeting had to be made somewhat hurriedly. Although the program had been ready for many months, participants had to be notified that the meeting would be held; local arrangements had to be checked. However, despite these handicaps, the meeting will long be remembered as one of the outstanding, most successful meetings ever held. The local arrangements were perfect. The hotel management outdid itself in contributing its share to the success of the meeting. The attendance was larger than ever before. Many colleges sent more than one delegate. One college was represented by six delegates. Only five member colleges were not represented: Louisiana State, South Dakota, McGill, Queen's and Manitoba.

The program was well received and held the attention of the delegates until the very end. Often the attendance on the third day is not as good as it should be, but this time it was very good. Few delegates were absent.

The program of the first session dealt with tests to aid in the selection of students. The result was the appointment of a committee to study and evaluate all testing methods with the end in view of finding the best test.

The second session dealt with visual education. The contributions to this program aroused much interest and will doubtless result in a wider and better use of this aid to education in the undergraduate curriculum.

The third session dealt mainly with the curriculum and stressed the need for a complete revision on the basis of modern methods of pedagogy, breaking away from tradition which has kept the curriculum more or less static for many years. The medical colleges are fully aware of the need for revising the curriculum but seem to lack the courage to cast aside tradition and set up a curriculum which is based on accepted pedagogic principles. A few colleges have recently made some radical departures from old methods, but more remains to be done and it should be done now.

In the business session, many problems arising out of the war were discussed by representatives of government agencies. Important among these were: (1) That medical schools may decelerate after the close of the present academic year. Selective service will permit a normal vacation period between academic years, that is, vacations of no longer duration than those in vogue prior to the beginning of the war. Vacations of six months' duration will not be recognized as being normal. Furthermore, students admitted to medical school before they reach the age of 18 years will not be called to service.

Internships can be extended to 12 months, including present incumbents. Students graduating next March or April must enter on their internships at once—for a 15 months' period. Thus there will be an overlap of two groups of interns for 3 months—from April to July. In the event that the hospital cannot house this double load of interns, the present group of interns will be called to service at the end of their nine months' intern service. In effect this will restore for 3 months at least the normal

—or more than normal—quota of interns.

The problem of assistant residents and residents has not yet been solved. It is possible that these positions may be filled by veterans. If that is done, interns cannot be advanced to these positions.

The complete discussion on these and other problems will be sent to member colleges shortly.

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Officers for 1945-1946
Place of 1946 Meeting

The following officers were elected at the Pittsburgh meeting to serve during the ensuing year: Dr. John Walker Moore, dean University of Louisville School of Medicine, assumed the presidency; Dr. Wm. S. McEllroy, University of Pittsburgh School of Medicine, becomes president-elect; Dr. Jos. C. Hinsey, dean Cornell University Medical College, is the new vice president; Dr. A. C. Bachmeyer, associate dean University of Chicago Medical School, was re-elected treasurer, and Dr. Fred C. Zapffe was re-elected secretary. Drs. E. M. MacEwen, dean State University of Iowa College of Medicine, and L. R. Chandler, dean Stanford University School of Medicine, were re-elected Members of the Executive Council.

The personnel of the Executive Council is as follows: The president, president-elect and vice president; the outgoing president, Dr. Furstenberg, and Drs. E. M. MacEwen, L. R. Chandler, W. A. Bloedorn, dean of George Washington University School of Medicine, and Dr. W. C. Davison, dean Duke University School of Medicine. Dr. MacEwen was re-elected chairman of the Council.

The 1946 meeting of the Association will be held in New Orleans, October 28, 29 and 30. Tulane University of Louisiana School of Medicine will be the host.

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New Deans

The secretary read a list of 17 new deans who took office since the 1945 meeting of the Association. Attention was called to the fact that there is about a 15 per cent turnover in deans every year, partly by death but mostly by resignation. One new medical school was included in this list, the School of Medicine of the University of Washington in Seattle.

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William Pepper

On November 6, Dr. William Pepper becomes dean emeritus of the School of Medicine of the University of Pennsylvania, a position he has held since 1912. He has been a member of the faculty of the university since 1899. He is the oldest in point of service of all the faculty. Dr. Pepper was president of the Association of American Medical Colleges and for many years he was a member of its Executive Council. He has also been a member of many important committees, the last being the Committee on Internships on which he was a regional chairman.

Dr. Pepper held the deanship longer than any other dean of a member college and has always been an active participant in the affairs of the Association.

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The Army Specialized Training Program

The fate of this program has not yet been decided. If funds are made available, it will continue so far as students now in medical college are concerned. They will be carried through to graduation in 1948. There will not be any further input under this program, the premedical part of it having been discontinued. If the program is continued in medical schools it will not, in all probability prevent deceleration since Selective Service will recognize a normal vacation period between annual sessions. However, the Army may not approve of this. In that event, medical schools may consider asking to be released from their contracts with the Army. Now that the war is ended, they feel that they have made their contribution to the war effort with great sacrifice

because of depleted teaching personnel and heavy teaching loads for remaining personnel, many of whom are volunteers returning from retirement and who now seek release from teaching. This is a distressing problem, one which calls for serious consideration.

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Hahnemann Medical College

On the recommendation of the Executive Council the Association voted to put the Hahnemann Medical College on probation. This action was taken after a thorough inspection of the college had been made and subsequent interviews with members of the Board of Trustees who were given a complete report on the inspection.

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Chinese Government Medical Personnel

The Chinese government needs about 200 medical men, technicians, sanitary engineers and nurses to strengthen present available Chinese personnel. General practitioners and specialists in every field are needed badly. Candidates should be under 25 years of age and in good physical condition. Applications should be addressed to Dr. Szeming Sze, Chief, Far East Section Health Division, U. N. R. & R. A., 1344 Connecticut Ave., Washington 25, D. C.

Release of Medical Officers

Both the Army and the Navy are doing everything possible to release faculty members in service at the earliest possible moment. Some of these men are still abroad. Some are essential to the services. The release of these men will, therefore, be delayed. The Navy has stated that all faculty members will be separated from the service by April, 1946.

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The Navy V-12 Program

The end of the present term marks the termination of the V-12 program in all medical schools. Students now members of this program will revert to an inactive status and may continue their medical studies as civilians or accept assignment to other duties in the Navy.

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A New Abstract Periodical

The editors, Dr. Emil Novak and Dr. Nicholson G. Eastman, of Baltimore, announce the publication of a new abstract periodical, obstetrical and gynecological survey. It will cover the entire medical periodical literature, both foreign and domestic, and will appear bimonthly beginning in February, 1946. Nine hundred pages per year will be published. The subscription price will be $9.00. The Williams & Wilkins Company, Baltimore, will be the publishers.

College News

University of Texas
Medical Branch

Dr. George M. Decherd, Jr., Director of the Post-Graduate Training Program, announces a conference on internal medicine to be held at the Medical School November 1 to 3. Dr. George Fahr, professor of medicine at the University of Minnesota Medical School, will be one of the guest speakers.

A conference in pediatrics under the joint auspices of the University of Texas Child Health Program and the Maternal and Child Health Division of the Texas State Board of Health will be held at the Medical School November 12 to 17. The program as arranged by Dr. Arild E. Hansen, professor of pediatrics, will include Dr. Alton Goldblum of the department of pediatrics of McGill University; Dr. Clifford G. Grulee, Rush Professor of Pediatrics, University of Illinois College of Medicine; Dr. Joseph A. Johnston, Pediatrician-in-Chief, Henry Ford Hospital, Detroit; Dr. Rustin McIntosh, Professor of Pediatrics, University of Minnesota Medical School. The conferences on pediatrics arranged by the University of Texas Child Health Program are supported by the William Buchanan Foundation of Texarkana.

Mr. James W. Rockwell of Houston, Texas, has given a generous grant to aid the endowment of the Marvin Lee Graves Fellowship in Internal Medicine. This Fellowship, established by Doctor Graves' children, is designed to assist a young physician of promise in special research and study in internal medicine. It is named in honor of Dr. Marvin Lee Graves of Houston, Professor Emeritus of Medicine, University of Texas School of Medicine.

Sharp & Dohme, Inc., have given a generous grant to the Department of Pediatrics for study of sulfa drugs in the control of intestinal infections. The grant is to be administered by Dr. Arild E. Hansen, Professor of Pediatrics and Director of the Child Health Program, with the cooperation of Dr. Edgar J. Poth, Professor of Surgery and Director of the Laboratory of Experimental Surgery, and Dr. MacDonald Fulton, Visiting Professor of Pediatric Research.

Dr. Charles M. Pomerat, professor of anatomy, has been made a Corresponding Member of the Mexican Academy of Science. Doctor Pomerat recently spent several weeks in Mexico City in the study of tropical diseases and in assisting in establishing laboratories for tissue culture experimentation.

Dr. Willard R. Cooke, professor of obstetrics and gynecology, has been made an Honorary Member of the Italo-American Centre.

On the opening of the fall session of the University of Texas Medical Branch, Galveston, the auditorium of the Out-Patient Clinic Building was named Randall Hall in honor of Dr. Edward Randall (1860-1944) who served as Professor of Materia Medica and Therapeutics from 1890 to 1929, when he became Professor Emeritus and Chairman of the Board of Regents of the University of Texas.

Dr. George Herrmann, Professor of Medicine, spent two weeks in Mexico City as the guest of the Institute of Cardiology and of the University Medical School.

Dr. Ludwik Anigstein, Associate Professor of Preventive Medicine, attended the first Inter-American Conference on Typhus Fever, held in Mexico City October 8 and 9. Doctor Anigstein was invited to discuss the classification of rickettsia.

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Western Reserve University
School of Medicine

Warren H. Gardner, Ph.D., San Mateo, Calif., has been appointed professor of hearing and speech therapy and

director of clinical services of the Cleveland Hearing and Speech Center. Dr. Gardner has been associated with the California state department of public health and has been conducting tests on school children of the state. The Cleveland Hearing and Speech Center recently was formed by the Cleveland Hearing Center and Speech Clinic at Western Reserve University.

Victor C. Myers, Ph.D., professor and head of the department of biochemistry, has been named director of a newly created department of clinical biochemistry at the school. The present department of biochemistry will be enlarged and a new director selected.

The Beaumont Foundation has given $220,000 to Western Reserve University. One hundred thousand has been designated for application toward the cost of a new building to be constructed by the School of Applied Social Sciences, which will ultimately cost about $500,000. One hundred thousand will be devoted toward research in the department of pathology in the medical school and $20,000 will be applied to help finance a project to be undertaken jointly by Western Reserve University and the Cleveland Hearing and Speech Center. A portion will be used for completing and remodeling the new headquarters of the center and the remainder for research and training of teachers in speech and hearing work. Both gifts were made in memory of Dudley, deceased son of the late Commodore Louis D. Beaumont, the latter having been in earlier years a resident of Cleveland and one of the founders of the May Company.

Approval has been given to the establishment of a psychiatric clinic at the University Hospitals to provide treatment for civilians for a nominal fee and free treatment for servicemen and their families who are referred there by the American Red Cross. Establishment of the clinic is made possible through the Greater Cleveland Red Cross chapter, which has procured financial support for the part of the program applying to servicemen and their families. A new professorship of psychiatry has also been set up, the first incumbent to be Major Douglas D. Bond, head of psychiatry, U. S. Air Surgeon's Office, Washington, D. C., who will take over his new activities as soon as he is released from service. Major Bond will serve as director of the clinic, which will be staffed by five psychiatrists, one psychologist and psychiatric social workers and nurses. For the present it will be housed in Lakeside Hospital. Eventually a new psychiatric building to cost about $450,000 will be constructed to adjoin the other hospitals of the University Hospital group on the Western Reserve campus. The only member of Major Bond's staff thus far announced is Lieut. Col. Edward O'Neil Harper, who was with the Lakeside unit in the Pacific theater for three years.

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Bowman Gray
School of Medicine

Dr. J. E. Hawkins, formerly instructor in physiology and special research associate in the psycho-acoustic laboratory at Harvard Medical School, has joined the faculty as assistant professor of physiology and pharmacology.

Dr. R. P. Morehead, associate professor of pathology, has been appointed director of the Department of Pathology and Bacteriology to succeed Dr. C. C. Carpenter who asked to be relieved of the direction of the department because of the pressure of administrative duties as dean. Dr. Carpenter will continue to be a member of the staff of the department, assuming the title of professor of legal medicine and director of the laboratory of clinical pathology.

Mr. Ray E. Brown resigned as administrator of the hospital effective September 1, 1945, to assume the position of assistant director of the University of Chicago Clinics. Mr. Reid Holmes, assistant superintendent of Duke Hospital, has been elected administrator to succeed Mr. Brown.

Dr. W. H. Fishman, assistant professor of biochemistry, has resigned his position effective October 1, 1945, and

accepted the position of Research Associate in the Departments of Surgery and Biochemistry at the University of Chicago School of Medicine.

Dr. Charles M. Norfleet, Jr., has received his discharge from the Army after serving three years in India and has resumed his position as Instructor in Urology.

The John and Mary R. Markle Foundation has awarded a grant of $7,000 to support the research in the Department of Internal Medicine under the direction of Dr. George T. Harrell, Jr.

The Council on Pharmacy and Chemistry of the American Medical Association has awarded a grant of $400 to support the research of Dr. Harold D. Green in the Department of Physiology on investigation of the influence of environmental temperature on ischemic compression shock.

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Marquette University
School of Medicine

Dr. W. A. Douglas Anderson has been appointed professor of pathology and bacteriology and Director of the Department. Dr. Anderson received his B.A. degree from Victoria College, University of Toronto in 1931; his M.D. degree from the University of Toronto in 1934, and his Master of Arts degree from the same university in 1936. Since his graduation he has been a fellow in pathology at the University of Toronto, 1935-1936; an assistant at Duke University, 1936-1937; instructor at the University of Tennessee, 1937-1940; and assistant and associate professor at St. Louis University from 1940 to the present time.

Dr. S. B. Pessin has been appointed associate professor of pathology and bacteriology at Marquette University School of Medicine.

Dr. Michael Laskowski has been appointed associate professor of biochemistry. He replaces Dr. Thomas W. Ray, who retired because of impaired health. Dr. Laskowski received his Doctor of Philosophy degree from the University of Warsaw, at which institution he became an assistant and later head of the biochemistry department. In 1935-1936 he held a fellowship of the Polish National Foundation and studied at the Basel Medical School in Switzerland. During 1936-1937 he did research work at the Lister Institute of Preventive Medicine in London, England, under a fellowship of the Rockefeller Foundation. Dr. Laskowski had been associate professor at the University of Arkansas for the past two and one-half years. Prior to that time he held research fellowships at Cornell University and the University of Minnesota. The John and Mary R. Markle Foundation of New York City has granted Dr. Laskowski $3,000 for a special study of enzymes.

◆ ◆

University of Utah
School of Medicine

The Rockefeller Foundation has given funds to the University of Utah School of Medicine to establish a program in child psychiatry.. Dr. Reynold A. Jensen, associate professor of neuropsychiatry and pediatrics, University of Minnesota Medical School, in charge of the child psychiatric clinic, University Hospitals, Minneapolis, is in Salt Lake City on the grant for a period of two months to create interest in the establishment of a child psychiatric program there.

An anonymous donor has given funds to the Utah Medical Foundation to present a series of lectures on current problems in pediatrics, the first of which was recently given by Dr. Joseph Stokes, Jr., William H. Bennett professor of pediatrics, University of Pennsylvania School of Medicine. Dr. Stokes's subjects were: "The Study of Hepatitis" and "Some Uses of Gamma Globulin in Hepatitis and Other Infectious Diseases." The second speaker in the series was Dr. Alexander Ashley Weech, B. K. Rachford professor of pediatrics, University of Cincinnati College of Medicine, who spoke on "Physiologic Consequences of Inadequate Dietary Protein" and "The Role of Cortical Development in Deter-

mining the Behavior of Infants." The Utah Medical Foundation was recently established at the School of Medicine with a gift by the first graduating class of the four year school.

Dr. H. D. Marshall, professor of preventive medicine and public health and a member of the committee administering the affairs of the medical school in lieu of a dean, has been appointed acting dean.

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Emory University
School of Medicine

Dr. Sidney C. Madden came to Emory from the University of Rochester in March, 1945. He replaced Dr. Roy Kracke as Professor and Chairman of the Department of Pathology.

Dr. William F. Friedewald of the International Health Division, Rockefeller Foundation, came to Emory on September 1, 1945, as Professor of Bacteriology and Chairman of the newly created department.

Dr. Russell H. Oppenheimer returned from three months leave of absence on September 1, 1945, to assume his duties as full-time Professor of Clinical Medicine.

Dr. Osler A. Abbott began his association with Emory University on September 1, 1945, as full-time Associate in Surgery. His special interest is thoracic surgery.

Dr. Francis P. Parker, after three years of service with the Army, has returned to Emory as Assistant Professor of Pathology.

Dr. R. Hugh Wood will soon begin his duties as full-time Associate Professor of Medicine in charge of the Graduate and Post-Graduate Program of the school.

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Medical College of Alabama

This is the new name of the University of Alabama School of Medicine, although it is really the original name of the college before it was a part of the university. Established in Tuscaloosa in 1920 as a two year school of medicine as the direct successor of the Medical College of Alabama in Mobile, it came to an end with the close of the week of final examinations on September 21 and the transfer to the new four-year Medical College of Alabama in Birmingham on October 8th of the faculty and students. During this quarter of a century the two-year school on the campus has established a record of which its faculty and students are proud. Every student who has completed the first two years there has been transferred to junior standing in an approved four-year medical school elsewhere, including the best schools in America, from Harvard to California and from McGill to Tulane. Of these 100% transfers less than one-half of 1% over all those years has failed of graduation in the schools to which they have been transferred.

Appropriate ceremonies marked the passing of the school from another cycle of its existence. Former Dean Stuart Graves becomes dean and professor of pathology emeritus, director of admissions and adviser to premedical students on the university campus, Chairman of the Committee on Student Welfare and editor of the Medical Bulletin. He has also been made a member of the University Committee on Student Health.

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Woman's Medical College

The Woman's Medical College of Philadelphia began its ninety-sixth session on September 12 when formal opening exercises were held in the Mary Dern Goodrich Auditorium at the college. The guest speakers on this occasion were Dr. Kate Savage Zerfoss, President of the American Medical Women's Association, and Lt. Colonel Margaret D. Craighill, M.C., A.U.S., Dean of the Woman's Medical College, on leave of absence for military service.

There are forty-six students in the incoming first year class and the total enrollment for the current college session is 163. The new students have come from twelve states, the District of

Columbia and Puerto Rico, and have previously attended thirty-three colleges and universities in different parts of the United States.

Dr. Marion Fay, Acting Dean, has announced the promotion of 22 faculty members and the appointment of 17 new members. The promotions on the staff include Dr. Mollie A. Geiss, to Professor of Pathology; Dr. Margaret DeRonde, to Clinical Associate Professor in Psychiatry; Dr. Mary R. Curcio, to Clinical Assistant Professor of Medicine; Dr. Mildred Pfeiffer, to Clinical Assistant Professor of Medicine; Dr. Marie Wiener, to Assistant Professor of Bacteriology; Dr. F. Marian Williams, to Clinical Assistant Professor of Gynecology. The new appointments include Dr. Virgene Scherer Wammock, Clinical Assistant Professor of Syphilology.

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Baylor University
College of Medicine

The Trustees of the recently incorporated Baylor University College of Medicine Alumni-Faculty Foundation have established a lectureship in memory of those Alumni who made the supreme sacrifice during World War II. Other projects for the Foundation will be presented to the Trustees by the Planning Committee at the next meeting.

The Foundation is a non-profit organization and according to its charter was formed "to promote and further medical education in the State of Texas by establishing an endowment and foundation in the interest of the welfare of the College of Medicine of Baylor University and for aiding and extending the work and medical activities of the said College of Medicine."

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Washington University
School of Medicine

Dr. Conrad S. Sommer recently resigned as deputy director of the mental hygiene service of the Illinois Department of Public Welfare to develop a psychiatric clinic at the St. Louis County Hospital, Clayton, and to accept an appointment as assistant clinical professor of psychiatry at Washington University.

All didactic work of the third year will be consolidated into a single conjoint course in medicine. This means that a disease will be discussed simultaneously by all the departments concerned and the student will be given a complete picture of the disease. Another innovation is the rearrangement of the clerkships of the third and fourth years so as to make possible a clinical clerkship in preventive medicine. To do this the third year has been divided into quarters instead of trimesters as in the past. The elective quarter in the senior year remains.

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Northwestern University
Medical School

Dr. Harry M. Richter, professor of surgery, has retired with the rank of professor emeritus.

Promotions: Dr. Smith Freeman, professor of physiology; Dr. Leon Unger, associate professor of medicine; Dr. Theophil P. Grauer, associate professor of urology; Dr. Eugene B. Perry, assistant professor of urology; R. Frederick Becker, Ph.D., assistant professor of anatomy; Dr. Gerard N. Krost, assistant professor of pediatrics.

Dr. J. Roscoe Miller, who has been in service in the Navy as Commander in the medical corps, has been released and has resumed his duties as dean of the medical school. Dr. George Gardner had been serving.

◆ ◆

University of Tennessee
College of Medicine

Dr. Frank E. Whitacre has been promoted from associate professor to professor of obstetrics and gynecology and head of the division. Dr. William T. Pride, who is relieved as head of the division, will continue as professor. Dr. James R. Reinberger has been promoted to professor of obstetrics and gynecology. Hugo M. Krueger, Ph.D., St. Louis, associate professor of pharmacology, St. Louis University School of Medicine,

has been appointed assistant professor of pharmacology. Dr. Isadore N. Dubin, instructor and associate in pathology, Duke University School of Medicine, Durham, N. C., has been appointed assistant professor of pathology and bacteriology.

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University of Michigan
Medical School

The department of postgraduate medicine has arranged a clinical teaching program for every Thursday afternoon beginning September 13 and continuing through December 20 at the University Hospital. The program is designed to serve the needs of practicing physicians who are interested in problems of internal medicine. It will consist of clinical discussion on ward rounds conducted each day by two different members of the senior staff of the department of internal medicine and will end with a conference of the entire medical staff and review of recent interesting electrocardiograms.

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University of Manitoba
Faculty of Medicine

Dr. Joseph Laurie Lamont, assistant chief medical officer, department of veterans' affairs, Winnipeg, has given $3,000 to the University of Manitoba, the proceeds of which are to be used to provide the Dr. T. J. Lamont Memorial Prize. The award will be offered every alternate year for an essay or report on original work or investigation on maternal and neonatal welfare. Competition will be open to graduates in medicine of the University of Manitoba up to the fifth medical year.

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Cornell University Medical College

Because a headline slug was dropped —and its absence went unnoticed—the Sloan Kettering Institute at Memorial Hospital item appearing in the September issue of the JOURNAL was credited to Columbia instead of Cornell. The Memorial Hospital has been affiliated with Cornell since 1914 under provisions set forth in a trust provided by the late Dr. James Douglas. The editor is chagrined and hopes Cornell will forgive this slip.

◆ ◆

University of Maryland
School of Medicine

The Emerson Drug Co. of Baltimore has awarded a second fellowship of $5,000 to the Department of Pharmacology. The purpose of the grant is to study analgesics and the mechanism of the relief of pain. The work is under the direction of Dr. John C. Krantz, Jr., Professor of Pharmacology. Dr. Harry Iwamota will work under this grant in the Department of Pharmacology.

◆ ◆

University of Kansas
School of Medicine

Dr. Joseph E. Welker, associate professor of medicine, has been appointed clinical professor. Drs. Don C. Peete, Arthur Graham Asher and Orval R. Withers have been advanced to associate professorships in medicine and Dr. Albert T. Steegmann to associate professor in psychiatry. Dr. Benjamin L. Elliott has been promoted to assistant professor of psychiatry.

◆ ◆

University of Washington
School of Medicine

As previously announced, state appropriations are available to establish and operate a four year school of medicine. It is planned to start with a freshman class in the Fall of 1946. Dr. Benjamin L. Turner, formerly president of Meharry Medical College, has been appointed dean and professor of medicine. He will assume his duties December 1.

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McGill University
Faculty of Medicine

Dr. Reginald P. Vivian, minister of health of Ontario, has been appointed to the chair of hygiene and social medicine.

University of the Philippines
College of Medicine

The college buildings were almost completely destroyed by the Japs. The equipment was looted. Not even a test tube remains. A bomb was placed under the library and the building blown up, the books burned. It was a fine library. All that remains of the college is a faculty endowed with the will to start from scratch and build anew. But they need help. They cannot buy most of what they need — equipment, books, periodicals. Anything our colleges can spare will be helpful. Write to the Headquarters of the Philippine Commonwealth, 1617 Massachusetts Ave., Washington, D. C. Tell them what you have to spare. They will tell you what to do with it.

Their professors have been out of touch with medicine for nearly four years. Many of them would like to visit one of our medical schools for a year and assist in teaching or fill a residency. Some may want to stay longer. They want a chance to catch up with what they have lost in reading as well as in practice. Theirs is a worthy cause, one which deserves all the support we can give. The Philippines need doctors, good doctors, more than ever before.

◆ ◆

University of Rochester
School of Medicine

Bradford N. Craver, Ph.D., M.D., has joined the Department of Pharmacology, Research Division, Ciba Pharmaceutical Products, Inc., Lafayette Park, Summit, New Jersey.

Dr. Wm. S. McCann has returned from service to resume his work as Dewey professor of medicine.

State University of Iowa
College of Medicine

The 75th anniversary of the college was celebrated September 27 and 28. The program consisted of clinics, ward walks, symposia, lectures by distinguished visitors, and demonstrations. Dean MacEwen and President Hancher also spoke.

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Louisiana State University
School of Medicine

Dr. John R. Shencken, professor and head of the department of pathology, has resigned. Dr. B. I. Burns has resigned to accept a position in the hospital division of the Medical Branch of the University of Texas in Galveston.

◆ ◆

Loyola University
School of Medicine

Assistant Dean Stewart Thomson having been separated from service has returned to Loyola to resume his former duties. Dr. Thomson was chief of the collection branch in the medical intelligence division of the preventive medicine service in the office of the surgeon general of the Army.

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Wayne University
College of Medicine

Dr. Hardy A. Kemp, Lt. Col., M.C., U. S. Army, Ret'd., has assumed his duties as dean.

◆ ◆

University of Pennsylvania
School of Medicine

Dr. Isaac Starr has been appointed dean to succeed Dr. William Pepper, who is now dean emeritus.

Book News

Textbook of Neuroanatomy

By Albert Kuntz, Ph.D., M.D., Professor of Micro-Anatomy, St. Louis University School of Medicine. Ed. 4. Lea & Febiger, Philadelphia. 1945. Price, $6.50.

This book presents in a clear, concise but comprehensive manner the fundamental facts of the anatomy and physiology of the nervous system necessary for the understanding of human behavior and the adjustment of the body and of its parts to factors in the external and the internal environment. The neural mechanisms through which the regulation of vital processes is carried out are outlined systematically. The structure of the human nervous system is described completely but without too great detail, and sufficient physiological data are included to unite structure and function in a dynamic pattern.

In the preparation of this fourth edition, the text has been thoroughly revised and partly rewritten. New data have been incorporated and many illustrations have been replaced by new ones designed with a view to greater clearness, while some additional ones have been introduced. New data regarding the conduction pathways for visceral impulses have been included and experimental and clinical studies regarding cortical projection areas have also been incorporated. In its present form this volume should clarify the subject which is too often obscured by details. It reduces to a minimum the difficulties which the student encounters. The teaching qualities of the text are enhanced by concise summaries that conclude each chapter and recapitulate the fundamental information.

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Hey Groves' Synopsis of Surgery

Edited by Cecil P. G. Wakeley, C.B., F.R.C.S., etc. Fellow of King's College, etc. Ed. 12. The Williams & Wilkins Company, Baltimore. 1945. Price, $6.

A very handy volume for the student, one which has proven its worth and popularity by passing through eleven editions. The editor is well known in the field of surgery.

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A Handbook for Dissectors

By J. C. Boileau Grant, Professor of Anatomy, and H. A. Cates, Associate Professor of Anatomy, University of Toronto. Ed. 2. The Williams & Wilkins Company, Baltimore. 1945. Price, $2.50.

Not a text; a help; no illustrations; just a guide to be used with an acceptable text.

Essentials of Neuropsychiatry: A Textbook of Mental and Nervous Disorders

By David M. Olkon, M.D., Associate Professor of Psychiatry, College of Medicine, University of Illinois. Lea & Febiger, Philadelphia. 1945. Price, $4.50.

This book presents the fundamental principles for the evaluation of mental disorders based on genetic, psychologic, psychiatric and general medical information.

The main purpose of the book has been to present in concrete form adequate up-to-date knowledge of neuro-psychiatric problems which concern both the student, general practitioner and psychiatrist. The book meets the current demand for concrete and established facts and to this end, the author has endeavored to present his knowledge in understandable language and to abstain from mere speculation. The book confines itself to the presentation of fairly substantiated information and the more concrete data. It should be helpful and informative to both the student and practitioner.

An important feature in this book is the discussion of the capillary changes in their relation to mental disorders. It also covers the newer views of psychiatry, namely, Behaviorism; Psychoanalysis; Configurationism; Psychobiology; Analytical Psychology, and Individual Psychology.

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Endocrine Man: A Study in the Surgery of Sex

By L. R. Broster, M.Ch., F.R.C.S.; with a foreword by Sir Peter C. Mitchell, F.R.S. Grune & Stratton, Inc., New York. 1945. Price, $3.50.

An attempt to present a general survey of biological problems from the medical point of view. A discussion on the origin and evolution of behavior founded on the instinctive tripod, depending largely on chemical factors, tropisms and the autonomic nervous system, which lie below the threshold of consciousness and cerebral or mental control associated with it.

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Textbook of Bacteriology

By Edwin Jordan, Ph.D., Late Andrew McLeish Distinguished Service Professor of Bacteriology, and William Burrows, Ph.D., Associate Professor of Bacteriology, University of Chicago. Ed. 14. W. B. Saunders Company, Philadelphia. 1945. Price, $7.

Completely revised and brought up to date; much new material added.

Electrotherapy and Light Therapy: With the Essentials of Hydrotherapy and Mechanotherapy

By Richard Kovacs, M.D., Professor of Physical Therapy, New York Polyclinic Medical School. Ed. 5. Lea & Febiger, Philadelphia. 1945. Price, $8.50.

The fifth edition of this work offers a concise presentation of all present day phases of physical medicine with special emphasis on electrotherapy and light therapy. The newer uses and methods of electronics, electrodiagnosis, ion transfer and ultra-violet radiation have all been incorporated. The chapter on exercise has been considerably enlarged and a new chapter on hypothermy has been added together with a revised glossary covering definitions of electrotherapy and light therapy, muscle and nerve action and mechanotherapy. Each chapter has been brought up to date. Eighty-seven new illustrations have been added and forty-nine obsolete ones omitted.

◆ ◆

Human Biochemistry

By Israel S. Kleiner, Ph.D., Professor of Biochemistry and Physiology, New York Medical College. The C. V. Mosby Company, St. Louis. 1945. Price, $6.

The author's long experience as a teacher of medical students is reflected in this book. He deals with the subject as an integral part of the practice of medicine—not just a part of the medical curriculum. Therefore, biochemistry is integrated and correlated with clinical subjects as it should be.

◆ ◆

Nitrous Oxide Anesthesia: McKesson-Clement Viewpoint and Technique

By F. W. Clement, M.D., formerly Director of Anesthesia, Flower Hospital. Ed. 2. Lea & Febiger, Philadelphia. 1945. Price, $4.50.

Among the new or revised topics included in this edition are the more detailed method of administration, the dangers associated with prolonged oxygen deficiency, the mechanism and treatment of shock, the role of carbon dioxide and that of the sino aortic areas in the protection of the body in lowered oxygen intake. Finally the chapter on dental anesthesia has been expanded to include greater detail especially in the use of the naso-pharyngeal airway.

◆ ◆

Fractures of the Jaws

By Robert H. Ivy, M.D., Professor of Plastic Surgery, and Lawrence Curtis, M.D., Associate Professor of Plastic Surgery, University of Pennsylvania. Ed. 1.

For the specialist. An excellent work.

The Autonomic Nervous System

By Albert Kuntz, Ph.D., M.D., Professor of Micro-Anatomy, School of Medicine, St. Louis University. Ed. 3. Lea & Febiger, Philadelphia. 1945. Price, $8.50.

This edition describes the autonomic system briefly and adequately, points out its relationships to the cerebrospinal nervous system and describes its functional activity in disease. The new data afford a more adequate basis for the understanding of certain phases of the activity of the autonomic nerves. This edition contains in a well-organized form such a wealth of information concerning the autonomic nervous system that it offers an indispensable guide to the students of the subject.

◆ ◆

Plaster of Paris Technique in the Treatment of Fractures and Other Injuries

By T. B. Quigley, Instructor in Surgery, Harvard Medical School. The Macmillan Company, New York. 1945. Price, $3.50.

One of the important things every medical student should know and know well is the application of a plaster cast. Too often not sufficient stress is placed on this subject in the medical school. Colonel Quigley has done a fine piece of work. Every medical student should own a copy of his book.

◆ ◆

Facial and Body Prosthesis

By Carl D. Clarke, Ph.D., Associate Professor of Art as Applied to Medicine, School of Medicine, University of Maryland. The C. V. Mosby Company, St. Louis. 1945. Price, $5.

A most fascinating book but great skill and experience is needed to make the moulages it describes. This calls for a new specialty in medicine. This book will help.

◆ ◆

Textbook of Obstetrics

By Henricus J. Stander, M.D., Professor of Obstetrics and Gynecology, Cornell University Medical College. Ed. 9 of Williams' Obstetrics; the author's third. D. Appleton-Century Company, New York. 1945. Price, $10.

Remains a standard text. Beautifully and serviceably illustrated. It is questionable whether there is a place for the extensive bibliography in a textbook. After all, students more than practitioners use these books. They have neither time nor inclination to consult the literature. They expect that the text will give them all they need. Omitting the bibliography would reduce the size of the book considerably, its weight and its cost.

One Hundred Years of Gynaecology: 1800-1900

By James V. Ricci, M.D., Clinical Professor of Gynaecology and Obstetrics, New York Medical College. The Blakiston Company, Philadelphia. 1945. Price, $8.50.

Anyone interested in medical history will find this an interesting and valuable addition to his library. The author is to be complimented on what he has accomplished.

◆ ◆

Diseases of the Nervous System

By F. M. R. Walshe, M.D., University College Hospital, London. Ed. 4. Williams & Wilkins Company, Baltimore. 1945. Price, $4.50.

Bringing the subject down to where the medical student can understand it.

◆ ◆

The Principal Nervous Pathways

By Andrew T. Rasmussen, Ph.D., Professor of Neurology, University of Minnesota Medical School. Ed. 3. The Macmillan Company, New York. 1945. Price, $3.50.

Neurological charts and schemes with explanatory notes; should help the student to get it.

Hygiene

By J. R. Currie, M.D., Professor Emeritus of Public Health, University of Glasgow, and A. G. Mearns, M.D., Senior Lecturer in Public Health, University of Glasgow. Ed. 2. The Williams & Wilkins Company, Baltimore. 1945. Price, $6.

A very good text. Articles on Nutrition and Dietaries have been added to bring the book up to date.

◆ ◆

Fractures and Orthopedic Surgery for Nurses and Masseuses

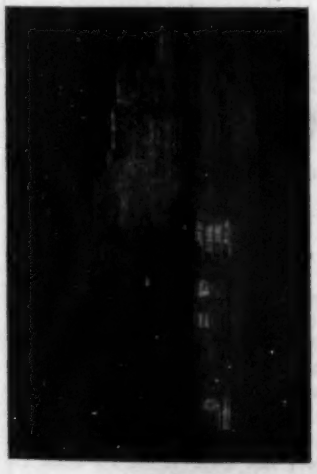
By Arthur Naylor, Ch.M., M.B., F.R.C.S. Foreword by Ernest Finch, M.D., Professor Surgery, University of Sheffield. The Williams & Wilkins Company, Baltimore. 1945. Price, $5.

◆ ◆

Essentials of Clinical Allergy

By Samuel J. Taub, M.D., Professor of Medicine, Cook County Graduate School of Medicine. The Williams & Wilkins Company, Baltimore. 1945. Price, $3.

This brief but thorough presentation places strong emphasis on diagnosis and treatment and gives clear definitions of the materials employed in therapy. A good book.



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A Companion to Manuals of Practical Anatomy

By E. B. Jameson, M.D., Lecturer on Anatomy, University of Edinburgh. Ed. 6. Oxford University Press, London. 1945.

An epitome for the dissector and the "brusher upper."

◆ ◆

Handbook of Physiology and Biochemistry

By R. J. S. McDowall, M.D., Professor of Physiology, University of London. Ed. 38. The Blakiston Company, Philadelphia. 1945. Price, $8.

The successor of Kirke's Physiology with which many present day practitioners are well acquainted. The present author has maintained much of the former Kirke, thus conserving its high standard as a text in physiology.

◆ ◆

Text Book of Pharmacognosy

By George E. Trease, Ph.C., Lecturer on Pharmacognosy, School of Pharmacy, University College of Nottingham. Ed. 4. The Williams & Wilkins Company, Baltimore. 1945. Price, $7.50.

For the pharmacy student.

◆ ◆

Textbook of Medicine

By Various Authors. Edited by J. J. Conybeare, M.C., Physician to Guy's Hospital. Ed. 7. The Williams & Wilkins Company, Baltimore. 1945. Price, $8.

In keeping with its usual high standard. A new section on suplhonamides has been added; section on pulmonary tuberculosis has been rewritten; other sections have been revised or rewritten.

◆ ◆

American Pharmacy:
Fundamental Principles and Practices; Pharmaceutical Practices; Pharmaceutical Preparations; Biologicals

Editor in Chief, Rufus A. Lyman, M.D. J. B. Lippincott Company, Philadelphia. 1945. Price, $8.

For pharmacists and students of pharmacy. A magnificent work.

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A PRIMER OF ELECTROCARDIOGRAPHY

By GEORGE BURCH, M.D., F.A.C.P., and TRAVIS WINSOR, M.D.
Associate Professor of Medicine, Instructor in Medicine,
Tulane University School of Medicine.

Octavo, 215 pages, illustrated with 235 engravings. Cloth, $3.50.

This new work is in every sense a primer. Its object is to enable the student who is entirely unfamiliar with the subject to acquire a fundamental knowledge of electrocardiography in the most direct manner. The material is presented from a mechanistic point of view. Only with a knowledge of the mechanism is it possible for the reader of electrocardiograms to unravel individual tracings. The mechanisms are visualized by many diagrams. The difficult subject of Ventricular Gradient is simplified. Although every effort has been made to keep this presentation both simple and brief, it is both authoritative and fundamental.

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